Access to adequate maternal care in Eastern Europe

ACCESS TO ADEQUATE MATERNAL CARE IN EASTERN EUROPE

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CONTENTS

LIST OF ABBREVIATIONS

ATT	Average treatment effect on the treated
C-section	C-section Section
EU	European Union
FGDs	Focus group discussions
GDP	Gross domestic product
IDIs	In-depth interviews
MDG5	Millennium Development Goal 5
MMR	Maternal mortality rate
NCDC	National Center for Disease Control
OOP	Out-of-pocket
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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General Introduction

1

1.1 SCOPE OF THE DISSERTATION

Annually, around 210 million women become pregnant. Maternal health is not a marginal issue, but affects the lives of many women and families worldwide.[1] It is key to sustainable development and the well-being of future generations. Maternal health is the health of a woman during the maternal period, including pregnancy (the antenatal period), childbirth and the postnatal period (up to 42 days after birth).[1,2] Improving maternal health is a key priority for many governments. A renewed commitment to maternal health was made with the United Nations "Global Strategy for Women's, Children's and Adolescent's Health (2016-2030)".[3] Furthermore, one of the targets of Sustainable Development Goal No. 3 (Good health and well-being) is to reduce maternal mortality, with other targets moving beyond survival and aiming to improve maternal health more generally.[2]

Maternal health is often measured by maternal mortality, but there is a wider issue of maternal morbidity.[4] In 2017, about 810 women died daily from mostly preventable causes related to pregnancy and childbirth.[5] The global maternal mortality rate (MMR) in 2017 was estimated at 211 maternal deaths per 100,000 live births, a decline of 38% compared to 2000 when it was 324 per 100,000. On average, the global MMR is declining by 2.9% annually. At this scale of progress, however, the sustainable development goal 3, target 3.1, which aims to decrease the global MMR to less than 70 per 100,000 live births by 2030, will not be achieved.[1c2]

Maternal health and healthcare also affect and are directly related to new-born or neonatal health, which refers to a baby's first month of life. Despite tremendous progress to reduce neonatal mortality by half between 1990 and 2018, it still amounts to 2.5 million deaths annually or 7000 deaths daily, and a rate of 1800 in 100,000 live births.[2] The highest burden of both, maternal and new-born mortality, occurs in low-resource settings where health systems are weak and the broader context is challenging, such as in fragile states in Africa and South Asia with weak state capacity. There, the MMR is on average 415 per 100,000 births, which is very high when compared to the average rate of 10 per 100,000 in the WHO European Region.[1,2,5] The annual neonatal mortality rate in 2017 was highest in West and Central Africa, at 3020 deaths per 100,000 live births, and in South Asia, at 2690 per 100,000 livebirths. This is more than 9 times higher than the rate in Western Europe (270 per 100,000) and more than 4 times higher than in Eastern Europe and Central Asia (650 per 100,000).[6] However, there are large disparities in neonatal and MMR among countries in both developing and developed regions.[5] In 2017, according to the Fragile States Index, 15 countries were considered to be on "very high alert" or "high alert" because of being a fragile state (South Sudan, Somalia, the Central African Republic, Yemen, Syria, Sudan, the Democratic Republic of the Congo, Chad, Afghanistan, Iraq, Haiti, Guinea, Zimbabwe, Nigeria and Ethiopia), and these 15 countries had an MMR in 2017 ranging from 31 (Syria) to 1150 (South Sudan) per 100,000 live births.[2]

Women die as a result of health complications during the maternal period. Most of these complications develop during pregnancy or from complications that already existed before but worsened during pregnancy.[7] The immediate causes of maternal mortality and morbidity are increasingly diverse. The main complications that result in maternal deaths include: severe bleeding and infections during and after childbirth and high blood pressure during pregnancy.[7] Most maternal deaths are avoidable, as the healthcare solutions to prevent or manage complications are well known.[5] The number of maternal deaths also reflects inequities in access to health services, and highlights the gap between rich and poor groups within as well as between countries. Diverse maternal health needs require diverse maternal care services within the framework of universal health coverage.[1]

Maternal care is the care women receive by maternal care providers (e.g. midwives, gynaecologists) during the antenatal, birth and postnatal period. Accessing appropriate maternal care provided by skilled and competent maternal care providers during the whole maternal period can save lives of women.[2] In order to avoid poor maternal health outcomes, the World Health Organization (WHO) recommends a minimum of 8 antenatal care visits (during pregnancy) and 4 postnatal care visits (after birth).[4,8] It is particularly important that all births are attended by a skilled provider as timely management and treatment can make the difference between life and death. Severe bleeding can kill a healthy woman within two hours, but this can be avoided if she is attended to in time. Infection after childbirth can be eliminated by early detection of infection signs and good hygienic practices. High blood pressure could be detected and appropriately managed before the onset of eclampsia.[7] Following birth, the postnatal period, a time of 42 days following childbirth, is also a critical phase in the lives of women and new-borns. Almost half of maternal and a third of neonatal deaths occur within the first 24 hours after birth.[4,6]

In all countries, the burden of maternal and neonatal deaths falls disproportionately on the most vulnerable groups of women.[1] Poor women in remote areas are the least likely to receive adequate maternal care. This is especially true in low resource settings and for regions with a low number of skilled health professionals. Other factors that prevent women from receiving or seeking care during the maternal period include: poverty, geographical distance, lack of information, inadequate services and cultural practices.[5] In Europe, groups of women at higher risk of poor maternal health outcomes include adolescents, migrants, Roma and women with low socio-economic status or education level. These groups of women often do not seek or receive adequate antenatal care, and sometimes experience violence during pregnancy.[9]

Even though Europe is a minor contributor to the global maternal and neonatal mortality burden, MMR is higher in Eastern Europe than in Western Europe, as mentioned above.

MMR point estimates in the WHO European Region in 2017 ranged from 2 per 100,000 live births in Italy, Poland and Norway to 60 per 100,000 live births in Kyrgyzstan.[2] When zooming in to Eastern Europe, there are also large disparities among the countries in this region. MMR in 2017 was estimated to be 10 per 100,000 live births in Bulgaria, while in Latvia, Romania, Moldova and Ukraine it was estimated at 19 per 100,000 and in Georgia at 25 per 100,000.[2] Although Eastern European health system indicators (e.g. the number of health workers or coverage of the population with publicly funded maternal care) suggest quite well-resourced maternal care systems, maternal and neonatal health outcomes compare poorly with those in Western Europe.[10] The numbers of maternal and neonatal deaths also reflect inequalities in access to quality health services and highlight the gap between rich and poor.[5] System-level indicators, such as the number of health workers or public coverage of maternal care, only partly indicate access to maternal care. They do not capture other aspects that contribute to accessing care, such as the distribution of facilities and services, affordability, and acceptance. As it is of high importance for positive health outcomes to access adequate care, the appropriateness of care should also be evaluated.[4,11] This dissertation focusses on assessing and identifying barriers to accessing adequate maternal care in Eastern Europe, which involves the care for women and children during pregnancy, childbirth and the postnatal period. The evidence on this matter in Eastern Europe is scattered to non-existent.

1.2 MAIN CONCEPTS AND CONCEPTUAL MODEL

The key concept in this dissertation is access to adequate care. Adequate care means the extent to which care is safe, effective, timely, efficient, equitable and people-centred.[12] Access to care is a complex concept where five aspects require evaluation - availability, affordability, appropriateness, approachability and acceptability. If care is available and there is an adequate supply of services, then the opportunity to obtain healthcare exists. However, the extent to which a population gains access and utilises the services also depends on financial, organisational, social and cultural aspects. Services available must also be relevant, safe and effective if the population is to gain access to satisfactory health outcomes. Access to services has to be considered in the context of differing perspectives, health needs and material and cultural settings.[13,14]

This dissertation evaluates access to adequate maternal care by considering five factors that contribute to it - availability, affordability, appropriateness, approachability and acceptability. Operationalization of these five main concepts that are used throughout the dissertation is necessary to provide better insights into access to maternal care in the context of Eastern Europe.

Availability

Availability refers to the geographical location, distribution and number of healthcare facilities, their opening hours, as well as the services and providers that the service users (childbearing women in our case) can choose from.[15] This means that access to maternal care could be limited in certain locations due to the unavailability of services because of a lack of healthcare providers, institutions or certain medical equipment. Availability can be impacted upon by spatial and temporal factors,[16] such as the distance between the service user (in this case, the pregnant woman) and the healthcare facility, and the time spent waiting or traveling.[17]

Appropriateness

Appropriateness reflects the technical and professional aspects of care and their adequacy, i.e. what services are provided and how they are provided.[15] It also refers to the appropriateness of the facilities and their environmental aspects. Appropriateness of care entails clinical and social quality. It also refers to the absence of undertreatment and overtreatment, such as unnecessary C-section section (C-section), which is an example of inappropriate care.[16] In maternal care, clinical quality refers to the quality of procedures and care delivered by health professionals, while social quality refers to facility maintenance, accommodation and environment.[18] In order to improve health outcomes, healthcare must be of good quality: safe, effective, timely, efficient, equitable and people-centred. In 2016, the WHO published standards for improving the quality of maternal and new-born care, which place people at the centre of care by improving both the provision of and patients' experience of healthcare. Provision of healthcare includes evidence-based practices for routine care and management of complications, actionable information systems and functioning referral systems, while experience of care includes effective communication, respect and preservation of dignity and emotional support. These factors, along with competent and motivated human resources, and essential physical resources, are a critical part of ensuring the quality of (maternal) care.[19]

Affordability

Affordability reflects the payments made by the care user, including various types of out-of-pocket (OOP) payments, but also indirect payments (e.g. travel costs) that make care less affordable and may limit access to it.[15] Affordability barriers imply that even if care is available and appropriate, the childbearing woman might be unable to access it because she is unable to pay for it. OOP expenses can be classified as: formal (regulated by national legislation), quasi-formal (official charges set up by providers outside national regulation), informal (unofficial payments or gifts by the service user) and quasi-informal (e.g. medical products brought by the service user).[20] All types of OOP payments can severely limit the ability to access maternal care.[21,22]

Approachability

Approachability refers to the awareness of service availability among service users, as well as to the information distributed regarding available treatments and services.[15] It also refers to the psychological dimension of access, which might be hindered by poor communication, resulting in social distance and mistrust, and even by discrimination on the side of healthcare staff.[16] Thus, care could be available, appropriate and affordable, but pregnant women may not use it due to a lack of information or some psychological access barriers.[17]

Acceptability

Acceptability is determined by cultural, traditional and health literacy factors that determine whether care is accepted by individuals, as well as whether and how often care will be demanded.[15,23] Thus, care might be available, appropriate, affordable and approachable, but not acceptable due to cultural, traditional and health literacy aspects.[24] Acceptability can also be influenced by the healthcare provider, such as when non-acceptance of pregnant women influences care-seeking behaviour and leads to unwillingness to seek care.[25]

Conceptual framework

Already in 1981, it has been proposed in the literature that access is a measure of the fit between characteristics of providers and health services on one hand and characteristics and expectations of clients on the other hand, and that this concept should be evaluated from five different perspectives.[14] Over time, these five concepts have been re-evaluated and adjusted by various authors.[14,15,26] They are widely used, as described by Levesque et al.[15]

Figure 1.1 illustrates the operational definition of access to adequate maternal care applied in this dissertation. It is based on the framework proposed by Levesque et al.,[15] and the additional considerations outlined above.

1.3. MATERNAL CARE PROVISION IN EASTERN EUROPE

This dissertation includes a systematic overview on access to adequate maternal care in Eastern Europe. It then focusses on selected Eastern European countries where evidence on this topic is absent and MMR exceeds the average of the WHO European Region. These countries are: Bulgaria, Georgia, Latvia, Moldova, Romania and Ukraine.

Maternal care in Bulgaria

Bulgaria has a public-private healthcare financing system that includes compulsory social health insurance contributions, taxes, OOP payments, voluntary health insurance premiums, corporate payments, donations, and external funding.[27] Despite an increase

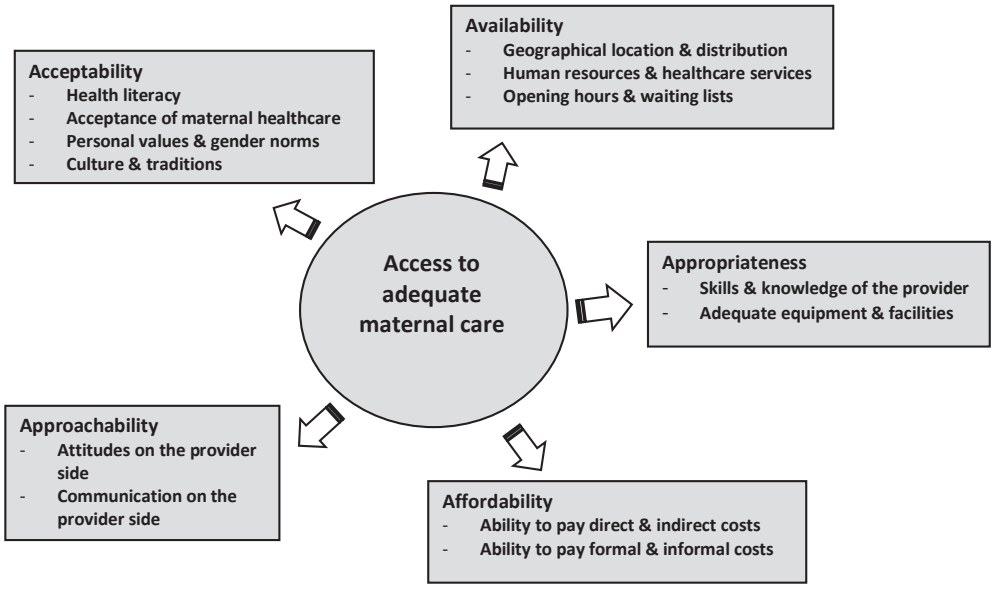

Figure 1.1: Conceptual framework on access to adequate maternal care; based on Levesque et al.[15]

in total health expenditure as a share of gross domestic product (GDP), the health system is still inappropriately funded. Professional mobility has resulted in a shortage of healthcare workers. This, combined with a shortage of equipment, inhibits the provision of good quality maternal care in case of complications.[28] Maternal care in Bulgaria is under-researched. However, studies generally suggest major shortcomings related to efficiency, quality and equity in healthcare provision.[29] For all insured women, maternal care during pregnancy, childbirth and the postnatal period in Bulgaria is free-of-charge when provided within the public sector and all women are entitled to freely choose their maternal care provider.[19,27] However, women have reported paying informally for childbirth and being asked to bring pharmaceuticals, medical supplies, appliances, bed linen and food for their hospitalisation that should in fact be provided free of charge.[30] The private (maternal) healthcare sector in Bulgaria is also well developed, which allows maternal care provision to those willing and able to pay for the services. Childbirth in Bulgaria takes place in public and private hospitals.[27] Neonatal mortality in Bulgaria is found to be higher in rural areas and the care in maternity wards does not correspond to international standards, especially regarding breastfeeding and psychological support, which is an indicator of the need for improving the quality of maternal care.[28]

Maternal care in Georgia

Maternal mortality in Georgia is among the highest in Europe. Maternal care in this country is rather complex and fragmented. Maternal care services are provided by an obstetrician/gynaecologist in women's consultation centres and maternal houses, which in more than 95% of cases are private. In Georgia, in 2016, about 20% of women did not even receive four antenatal care visits, while, as mentioned above, the WHO currently recommends 8 antenatal care visits for positive health outcomes.[31] Furthermore, only 86% of rural women compared to 93% of urban women seek their first maternal care visit before 12 weeks of pregnancy. Postpartum care in Georgia is largely non-existent and is also not funded by state programs.[32] While nearly all women in Georgia give birth in healthcare institutions (99% in 2016), the adequacy of timely detecting pregnancy-related health risks is underexplored.[31] Perinatal healthcare centres, especially those in rural areas, lack resources to deal with complications and often do not (timely) refer women to higher levels of care.[31] Maternal care quality is also affected by the absence of mandatory continuous professional development and quality controls in private medical facilities, which results in quality-of-care differences between providers. Accessing adequate maternal care in Georgia can be expensive as private maternal care providers can freely set the price for the services they provide.[33,34] This is particularly problematic since only four antenatal care visits are covered publicly and all medical tests, medications and additional child-birth costs women need to cover OOP. State programs do not effectively protect women from this financial risk, as only cases with serious complications receive financial support. [32,33,34]

Maternal care in Latvia

Maternal mortality in Latvia is among the highest in the European Union (EU) and maternal health has been declared a national priority. Women are entitled to free-of-charge maternal care services delivered by providers working in the public system or by private providers who have been contracted by the National Health System. Latvia applies the "money follows the pregnant woman" principle, where providers working with public funds are reimbursed on a fee-for-service basis against a price set at the national level. There are no restrictions on the volume of service provision; it is up to the healthcare provider to determine it. Due to these measures, women in Latvia should be protected from experiencing financial hardship to cover the cost of maternal care services.[35] Women are free to choose their provider within and outside the publicly funded system. Maternal care in Latvia is mainly provided by a gynaecologist/obstetrician while midwives play an important role by attending women during birth, which mainly takes place in hospitals and maternity houses. All providers of maternal care are bound to meet minimum standards, which are determined by the Cabinet of Ministers Regulation No. 611. These standards include requirements for antenatal care, childbirth and postnatal care. For extra services within the public sector (e.g. a family room at the birth facility) or for services provided by privately funded maternal care providers, women have to

cover the OOP payments or cover the costs by voluntary insurance. Birth facilities in Latvia must perform at least 200 births a year, which is low when compared to the 700 recommended by WHO.[5,35] The health system in Latvia, including the maternal care sector, faces challenges. The lack of resources and geographical inequalities limit access to maternal care.[36] More than half of maternal deaths have been linked to limited or lacking use of maternal care.[37] Additional challenges for the maternal care sector are the burden of infectious diseases, such as HIV/AIDS, Hepatitis C and syphilis, which increase the risk of poor health outcomes.[38]

Maternal care in Moldova

Since the country's independence in 1991, Moldova's health system has gone through a transition and in 2004, Moldova established a Mandatory Health Insurance (MHI) system. However, in 2015, almost 15% of the population remained uninsured.[39] Maternal care in Moldova is organized at three levels and involves public and private providers. All women can freely choose their maternal care providers and are entitled to free-of-charge services provided in the public sector.[40] However, not all women are benefiting from these services, as 38% of all maternal deaths are due to the absence of antenatal care and 17.2% of them involve homebirths without the presence of a skilled birth attendant.[41] Furthermore, informal payments are common. More than half of women pay informal payments for maternal care services, and part of these payments are required by the healthcare provider.[42] Around 40% of the economically active population in Moldova is working abroad, which results in a shortage of healthcare workers, especially in suburban areas. Healthcare institutions are also characterized by a shortage of and outdated medical equipment. Furthermore, the challenging transportation infrastructure in Moldova imposes an additional strain to accessing care for women living in rural areas[43]. Some pregnant women in Moldova, especially those living in rural areas, lack health literacy with regards to maternal health.[44] The maternal care system insufficiencies raise concerns about access to adequate maternal care in Moldova.[45,46]

Maternal care in Romania

Since the revolution of 1989, the Romanian health system has gone through major changes. Even though health insurance is mandatory, 14% of the population is uninsured (these are mostly agriculture workers, unofficially employed and non-registered unemployed people).[47] In 2014, Romania had the lowest healthcare expenditure in the EU (5.6% of GDP). However, over 80% of total healthcare expenditure was publicly funded, a high percentage when considering the country's low total public expenditure. Healthcare services in Romania are fragmented and the different levels of care are inadequately developed.[47] Romania also faces a shortage of health workers and inadequacies in inpatient and outpatient care.[48] Maternal and infant mortality in Romania are among the highest in the WHO European Region.[47] Maternal care in Romania is organized at the national level with care provision at public and private hospitals. Insured women are

exempted from maternal care fees in the public sector.[48] Women opting for maternal care in the private sector have to pay for the services OOP or through private insurance schemes.[18] Services such as elective C-sections and home births are covered by the state social insurance funds, while antenatal care, childbirth and postnatal care are covered by the state fund.[47] Nevertheless, an alarming 78% of women in Romania are receiving inadequate antenatal care (initiation of care after the 4th month of pregnancy or less than 50% of recommended visits).[18] Reports show that more than 50% of women in Romania who die during the maternal period do so as a consequence of having received insufficient antenatal care.[10]

Maternal care in Ukraine

Despite recent improvements, maternal mortality remains relatively high in Ukraine and maternal health continues to be a national priority. Antenatal services are mostly provided at specialized outpatient clinics by a gynaecologist/obstetrician. During the antenatal period, women receive a record book, which is their patient file. This book contains information about their assigned place of childbirth.[5,49] Childbirth occurs in secondary care centres and tertiary care perinatal centres. Mothers are on average discharged within 3 days in case of a vaginal birth and within 5-7 days in case of a C-section. Similar to the entire healthcare sector in Ukraine, maternal care suffers from insufficient funding, which results in low quality and poor access to adequate care.[21] Women carefully choose their obstetrician and either agree beforehand about paying informally or reach another informal agreement. The bargaining process about care and payment between a pregnant woman (including her partner) and the obstetrician is an important part of the pre-childbirth arrangement. The informal payments in the Ukrainian healthcare sector and the overall lack of resources for healthcare raise concerns about both the affordability and appropriateness of care, including maternal care.[21] The government of Ukraine acknowledges these shortcomings. In 2015, a Strategic Advisory Group was established to reform the health system. Inpatient financing reform was designed in 2016 – 2019 and was launched in April 2020.[5,50]

1.4. DISSERTATION RELEVANCE, APPROACH, AIM AND RESEARCH QUESTIONS

Since the collapse of communist regimes, Eastern European countries have been experiencing a transition in their healthcare sectors. Even though starting at a similar point at that time, each country has progressed at a different pace and direction with regards to changes in the health system, but also with respect to the broader socio-economic circumstances. These countries have struggled economically and have also faced health system challenges in the financing and provision of care.[27,33,36,45,47,49,51,52] This has challenged the provision of and access to adequate maternal care. Maternal health

is an indicator of socio-economic circumstances and the functioning of a country's health system. More specifically, it reflects inequalities in access to good quality health services and highlights the gap between rich and poor. As maternal health in Eastern Europe is a concern, it is often a national priority. Even though it is an important subject in the European context that stands high on the policy agenda, there has been little research focusing on this subject and no studies specifically exploring the level of access to adequate maternal care in this region.[53] This dissertation helps to start filling this gap by identifying barriers to access to adequate maternal care services in the Eastern European region. It generates new empirical evidence and understanding of the existing barriers to accessing adequate maternal care services by exploring views from multiple stakeholders and several countries. To obtain more comprehensive evidence, this dissertation employs a broad perspective on access by evaluating five aspects that contribute to accessing adequate care – availability, appropriateness, affordability, approachability and acceptability, defined at the outset of this Chapter.

One of the specific gaps that this dissertation attempts to fill, is the lack of synthesized empirical evidence on access to adequate maternal care in Eastern Europe. Thus, a systematic review technique was employed to map out and synthesize the evidence available in the literature on this subject. This also identified gaps in the evidence among the countries in this region.

In addition to the region-wide overview based on a systematic review, this dissertation includes single and cross-country studies of EU and non-EU Eastern European countries where maternal health outcomes are poorer. Thus, the next contribution of this dissertation is to generate evidence to highlight and provide knowledge and insights into existing barriers to accessing adequate maternal care in Eastern Europe.

There is also a gap in understanding stakeholders' experiences regarding the current situation on access to adequate maternal care in Eastern Europe. Successful public health interventions require taking account of the views of relevant stakeholders. However, little is known about the lived experiences of women themselves and other stakeholders with regard to accessing adequate maternal care in these countries. Thus, an important contribution of this dissertation is filling this specific gap in the literature. This is done through studies in Georgia, Latvia, Bulgaria, Moldova, Romania and Ukraine. The dissertation triangulates the stakeholders' experiences and views on access to adequate maternal care, which provides a more comprehensive picture on this subject matter.

Consequently, the dissertation provides insights into the various barriers that exist to accessing adequate maternal care in Eastern European countries. The findings of these studies are also relevant for other countries in the Eastern European region, due to

similarities in political and health systems. The dissertation has societal relevance, as it is directed to the protection of mothers and their households from barriers accessing maternal care and the related poor health outcomes.

The study findings are of interest because of the poorer maternal health outcomes in Eastern Europe when compared to its Western counterparts, coupled with a lack of information on access to adequate care and care-seeking behaviour in this region. The identified barriers provide policy makers and other relevant stakeholders with tools to further improve maternal health outcomes by addressing the barriers that limit access to and provision of adequate maternal care. The appropriate policy measures will not only enhance access to and adequacy of maternal care services, but it will also increase care satisfaction among women and will improve care-seeking behaviour in return.

Specifically, this dissertation aims to increase our knowledge and understanding of the factors that contribute to barriers in accessing adequate maternal care in Eastern Europe. In view of this research aim, the central research question of the dissertation is: **What are the barriers to accessing adequate maternal care in Eastern Europe?** As explained earlier, access to care is a complex concept. Besides the availability of services, the services must also be relevant, safe and effective, if the population is to gain access to satisfactory health outcomes. Therefore, in order to answer the central research question, this dissertation formulates several sub-questions to evaluate five aspects of access - availability, affordability, appropriateness, approachability and acceptability, as defined in the conceptual framework (see Figure 1.1).

First of all, there is a need to know how available adequate maternal care in terms of time and spatial aspects is in Eastern Europe. Thus, the first sub-question is: **What are the barriers related to the availability of adequate maternal care in Eastern Europe?**

Second, the available services cannot be accessed if they are not affordable, thus, there is a need to know how affordable maternal care services are. For this reason, the second sub-question is: **What are the barriers related to the affordability of adequate maternal care in Eastern Europe?**

Third, besides availability and affordability, for maternal care services to be adequate they also need to be appropriate. Therefore, we need to identify how appropriate the equipment, facilities and provider skills are. Thus, the third sub-question is: **What are the barriers related to the appropriateness of maternal care in Eastern Europe?**

Furthermore, care-seeking behaviour is also affected by the way the healthcare user is approached and we therefore need to know how women are approached and communicated with by their maternal care providers. Thus, the fourth sub-question is:

What are the barriers related to the approachability of maternal care in Eastern Europe?

Finally, access to maternal care services and care-seeking behaviour also depends on cultural, traditional and (health) literacy factors that affect acceptance of maternal care service use. For this reason, it is important to ask the fifth sub-question: **What are the barriers related to the acceptability of maternal care in Eastern Europe?**

All five sub-questions are addressed by the first four studies of this dissertation (Chapters 2-5). First, they are addressed by systematically reviewing the literature discussing these five aspects of access to maternal care in Central and Eastern Europe. Further, a qualitative study in Georgia employs interviews with various decision makers and maternal care providers, and discusses in focus groups with mothers how accessible adequate maternal care is in Georgia. A mixed method study in Latvia also explores the five aspects of access to adequate maternal care by interviewing the relevant decision makers and maternal care providers. In the same study in Latvia and in a quantitative cross-country study in Bulgaria, Moldova and Romania, online questionnaires were completed by women to explore their experience with access to adequate maternal care in these countries. Finally, the sub-questions on affordability and appropriateness of maternal care are further addressed in Chapter 6 of this dissertation. In this Chapter, the experience of inpatient material care users and inpatient non-maternal care users with care affordability and appropriateness in Ukrainian hospitals are compared.

1.5. OUTLINE OF THE DISSERTATION

This dissertation consists of seven Chapters. This introduction is followed by five Chapters that contribute to answering the central research question.

Chapter 2 presents a systematic literature review, which analyses the literature on the barriers to accessing adequate maternal care in Eastern European countries in terms of all five aspects of access - availability, affordability, appropriateness, approachability and acceptability. It systematically reviews the empirical evidence on this topic from 2004 to 2016.

Chapter 3 is based on a single country qualitative study that presents the views of mothers, decision makers and healthcare providers on access to adequate maternal care in Georgia by evaluating the five aspects of access to maternal care - availability, affordability, appropriateness, approachability and acceptability. This is done by exploring the lived experiences of women and opinions of decision makers and maternal care providers regarding access to adequate maternal care in Georgia. Women share their experiences during focus-group discussions in Georgian language, whereas decision makers and

maternal care providers unfold their views through semi-structured interviews in both, English and Georgian language. Data are analysed by means of directed qualitative content analysis.

In **Chapter 4**, another single country study is presented, exploring the situation in Latvia. This was a mixed method study where women, through an online survey containing open-ended and closed questions, and decision makers and healthcare providers, through in-depth interviews, identify barriers to accessing adequate maternal care in Latvia with respect to all five aspects - availability, affordability, appropriateness, approachability and acceptability. Data are collected in Latvian language and analysed using the method of directed qualitative content analysis.

Chapter 5 entails a cross-country quantitative study where women in Romania, Bulgaria and Moldova, by participating in an online survey, share their experience with maternal care received in the three countries in terms of availability, affordability, appropriateness, approachability and acceptability of care. Survey data are collected through social media platform Facebook "mommy" groups in the respective country languages. Regression analysis in SPSS© is used to identify factors associated with accessing maternal care across the three countries.

Chapter 6 presents a quantitative study based on a secondary data analysis using three waves of household surveys in Ukraine in 2016-2018. It outlines the affordability and appropriateness of inpatient maternal care in Ukraine as experienced by maternal inpatient care users (cases) when compared to the experiences of non-maternal inpatient care users (controls). Matching methods were used to make the two groups comparable and the average treatment effect on the treated calculated in STATA© to determine the differences in the affordability and appropriateness of inpatient care between the cases and controls.

Chapter 7 is the final Chapter, which concludes the dissertation with a summary and discussion of the main findings.

2

Barriers to accessing adequate maternal care in Eastern European countries: a systematic literature review

The Chapter draws upon:

Miteniece, E., Pavlova, M., Rechel, B., & Groot, W. (2017). Barriers to accessing adequate maternal care in Central and Eastern European countries: a systematic literature review. Social Science & Medicine, 177, 1-8. DOI: 10.1016/j.socscimed.2017.01.049

ABSTRACT

Introduction

Maternal health outcomes in Eastern Europe compare unfavourably with those in Western Europe, despite macro-indicators that suggest well-designed maternal care systems. However, macro-indicators at the system level only capture capacity, funding and utilisation of care and not the actual allocation of financial and human resources, the quality of care and access to it. It is these latter aspects, which are problematic in the Eastern Europe region. In this study service-related indicators of access to maternal care in Eastern Europe are examined. These include availability, appropriateness, affordability, approachability and acceptability of maternal care.

Methods

This study uses a qualitative systematic literature review, analysing information of peer-reviewed articles published since 2004. Other inclusion criteria included language, setting and publication purpose. The included articles were analysed using a framework analysis technique and quality was assessed using standardized evaluation checklists.

Results

Results indicate improvements in maternal care. However, availability of care is limited by outdated equipment and training curricula, and the lack of professionals and pharmaceuticals. Geographical distance to healthcare institutions, inappropriate communication of providers and waiting times are the main approachability barriers. Some mothers are unaware of the importance of care or are discouraged to utilize healthcare services because of cultural aspects. Finally, a major barrier in accessing maternal care in Eastern Europe is the inability to pay for it.

Conclusions

Our findings indicate that major gaps in evidence exist and that more representative and better quality data should be collected. Governments in Eastern European countries need to establish a reliable system for measuring and monitoring a suitable set of indicators, as well as deal with the general social and economic problem of informality. Medical curricula in the Eastern European region need to be overhauled and there should be a focus on improving the allocation of medical staff and institutions as well as protecting vulnerable population groups to ensure universal access to care.

2.1. INTRODUCTION

The MMR in the WHO European Region compares favourably with that in other parts of the world, such as South-East Asia and Africa (18 versus 190 and 500 maternal deaths per 100,000 live births respectively, estimates for 2013).[54] This aggregated indicator however masks substantial disparities across the European countries and hides the relatively high rates in Eastern European countries.[10,55] In Albania, Armenia and Georgia, the MMR estimates for 2013 amount to 30-40 maternal deaths per 100,000 live births.[54] Within the EU, the MMR in countries such as Hungary, Latvia and Romania, is about 2-4 times higher than the EU average (estimated to be 8 maternal deaths per 100,000 live births in 2013).[54] A higher MMR not only indicates the more frequent occurrence of a tragic event but also suggests shortcomings in the maternal care system.[54,56,57]

Despite the higher maternal mortality in much of the Eastern European region compared with Western Europe, many macro-indicators of maternal healthcare are similar and seem to suggest that maternal care systems in Eastern European countries are well-resourced. Macro-level indicators provide a broad picture of health through aggregate measures that are useful in monitoring health trends and inequalities.[58] Eastern European countries score well on macro-indicators such as coverage of prenatal care (more than 95% of pregnant women having at least one visit to a prenatal care provider), presence of a skilled attendant at birth (virtually always) and adequate availability of emergency obstetric care (on average 4 facilities per 500,000 inhabitants).[10,55] Eastern European countries also spend more on health care than many low-income countries elsewhere in the world. The contradiction between the relatively high MMR and seemingly favourable health system indicators in the Eastern European region is not surprising since the above indicators only enumerate capacity, funding and utilisation of maternal care, but provide no information on the quality of care and the barriers to access, which have been identified as major problems in Eastern European countries.[10]

Another drawback of the macro-indicators in the Eastern European region concerns misreported or underreported data.[10,59] Owing to this, the real situation in the Eastern European maternal care systems cannot be fully understood if only macro-indicators are taken into account. The use of micro-level indicators of service quality and access is needed in addition to macro-level indicators for a comprehensive assessment of healthcare provision, not only in the Eastern European region but also worldwide.[60-62]

This Chapter analyses the barriers to accessing adequate maternal care in Eastern European countries. For this purpose, it systematically reviews the empirical evidence on this topic from 2004 to 2016. Following the framework of Levesque et al. (2013), we distinguish five aspects of access (for illustration, see the introduction, Figure 1.1):

- availability, which reflects the geographical location, distribution and number of healthcare service points, opening hours, services or providers that the patients can choose from;
- appropriateness, which refers to the technical and professional aspects of care and their adequacy, i.e. what services are provided and how they are provided;
- affordability, which refers to patient payments, including various types of OOP payments, but also indirect payments that make care less affordable and limit access to services;
- approachability, which reflects the awareness of service availability, transparency and information regarding available treatments and services;
- acceptability, which refers to cultural, traditional and informational aspects that determine whether institutionalized care is accepted by individuals, as well as whether and how often the care being available, accessible and affordable will be demanded.

We systematically searched for empirical studies on maternal care in Eastern European countries that cover at least one of the above aspects of access. The countries selected for this review are the countries of the WHO European region located in Eastern Europe, but excluding the Central Asian countries because of their specific organisation and outcomes in maternal care. Thus, the review includes Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Kosovo, Macedonia, Moldova, Montenegro, Poland, the Russian Federation, Serbia, Slovakia, Slovenia and Ukraine. The five aspects of access are used as themes according to which we extracted and classified relevant information from the publications included in the review. Thus, the study provides evidence to understand the shortcomings in Eastern European maternal care systems and in particular the barriers to access that exist in this region. This topic has not been addressed in a systematic literature review before. It also identifies gaps in our knowledge on maternity care in the Eastern European region. Finally, the review might help in defining access-related indicators for the assessment of maternal care provision not only in Eastern European countries but also in other parts of the world.

2.2. METHODS

This study applied the method of a qualitative systematic literature review to outline the evidence on access to maternal care in Eastern European countries. By identifying and synthesizing the available evidence based on the framework outlined above, this study design allowed us to gain in-depth insights into the complex problem of accessing adequate maternal care in Eastern European countries and to outline research gaps in the field.

For the selection of relevant publications, a systematic approach was followed. The literature was initially searched in May 2014 using five databases/search engines, starting with PubMed and being expanded to EBSCO HOST (CINAHL plus), Global Health, Popline, and EMBASE, in order to assure that all relevant articles were identified covering a time period of the preceding 10 years (2004-2014). The search was repeated in January 2016 to check for new articles published in 2014-2016.

The main keywords that were used for the article search were: maternal care, access, and Eastern Europe. These keywords were chosen as they were in line with the main concepts of the research objective. These keywords were used in different variations and combinations. Various keywords chains were tested to identify the one that gave the most effective results (with a low number of irrelevant publications). The final keywords chain used in the systematic literature search in 2014 in PubMed with titles/abstracts filter was as follows:

> *(((((“Maternal Health Services”[Mesh]) OR *natal OR “Prenatal Care”[Mesh] OR Matern* OR “Reproductive health services”[Mesh] OR Reproductive health care [Title/Abstract]) AND (“Europe, Eastern”[Mesh] OR “USSR”[Mesh] OR Albania OR Baltic States OR Latvia OR Lithuania OR Estonia OR Bosnia and Herzegovina OR Bulgaria OR Croatia OR Czech Republic OR Hungary OR Kosovo OR Macedonia OR Moldova OR Montenegro OR Poland OR Romania OR Belarus OR Russia OR Serbia OR Slovakia OR Slovenia OR Ukraine OR Armenia OR Azerbaijan OR Georgia OR CEE OR Russian Federation OR Eastern Europe OR Yugoslavia) AND (access OR availab* OR affordab* OR approachab* OR acceptability OR appropriat* OR informal payment* OR payment* OR OOP OR autonomy OR utilization OR utilisation))) AND “last 10 years”[PDat]) AND English [Language] AND (“2004”[Date - Publication] : “2014”[Date – Publication]).*

The final keywords chain used in the systematic literature search in 2016 in PubMed was identical to that in 2014 but with an adjusted limitation for the date of publication. The same applies for the search in the other databases/search engines.

The search strategy in EBSCO HOST (CINAHL) consisted of the same keywords chain but was adjusted to the requirements in the search engine using the field of abstracts or titles. The database Global Health was reviewed in all fields following the given keywords chain and adjusted to the database-specific search engine. The same keywords chain with extra stratification for the European region was applied in the Popline database. The search in EMBASE applied several inclusion criteria, such as English language and reach in titles/abstracts.

Publication selection criteria included the following: (1) only English language publications; literature in other languages was excluded; (2) only peer-reviewed articles to assure the quality of the evidence reviewed; (3) only publications that referred to geographical settings in the Eastern European region; (4) only articles published in the period 2004-2014 in the first search in May 2014, and published in 2014-2016 in the second search in January 2016, to gather the most up-to-date information. The relevance of the literature sources that focus on maternal care access in the region was considered and judged by the researchers. Additionally, the reference lists of the collected literature were reviewed to gather additional relevant sources that had been missed in the database search. The same inclusion and relevance criteria were applied. Two articles co-authored by researchers in the team, were indicated as 'golden hits' prior to the review.[21,22]

The content of the selected publications that met all eligibility criteria was then reviewed. First, essential information from each publication was summarized, then categorized and clustered according to the aspects of access outlined above. Information on study characteristics was also extracted. Finally, the publication characteristics and findings were synthesized in the form of tables and further analysed qualitatively by pooling the results. The key findings were also presented in a narrative manner.

The quality of the publications was assessed using standardized evaluation checklists. The checklists were developed based on the CASP (qualitative) and EPHPP (quantitative) quality appraisal tool checklists, which were adapted for the needs of the review. Specifically, the validity and reliability of the publications was assessed by analysing where the sources came from, whether the source was valid and whether they had been peer reviewed.[63] Further assessment criteria included questioning the research objectives on which the study was based and if the problem was clear, logically stated and appropriately supported by the literature. Lastly, questions referred to whether there could be another explanation for the relations between variables, and if the findings of a study were applicable to other settings and populations.[64] We also checked the quality of our review using the Prisma 2009 checklist (see Appendix A1).

2.3 RESULTS

The literature search in May 2014 yielded an initial list of 357 articles in PubMed that provided 29 relevant articles after the first screening of title and abstract. After the second screening based on the full text, 15 articles were retained. The search in the other databases also provided some relevant publications: EBSCO HOST - CINAHL plus (7 out of 57 articles), Global Health database (9 out of 63 articles), Popline database (2 out of 12 articles), EMBASE (10 out of 174 articles). However, only one of the articles found

in these databases was different from the articles identified in PubMed and was added to the database. After reviewing the reference lists of the 16 articles found through the databases, 2 additional articles were added, based on the same inclusion criteria. Thus, in total 18 articles met the inclusion criteria and were included in the literature review. The second search in January 2016 covering the time-period 2014-2016 resulted in three additional articles. Figure 2.1 presents a flow chart of the systematic literature search.

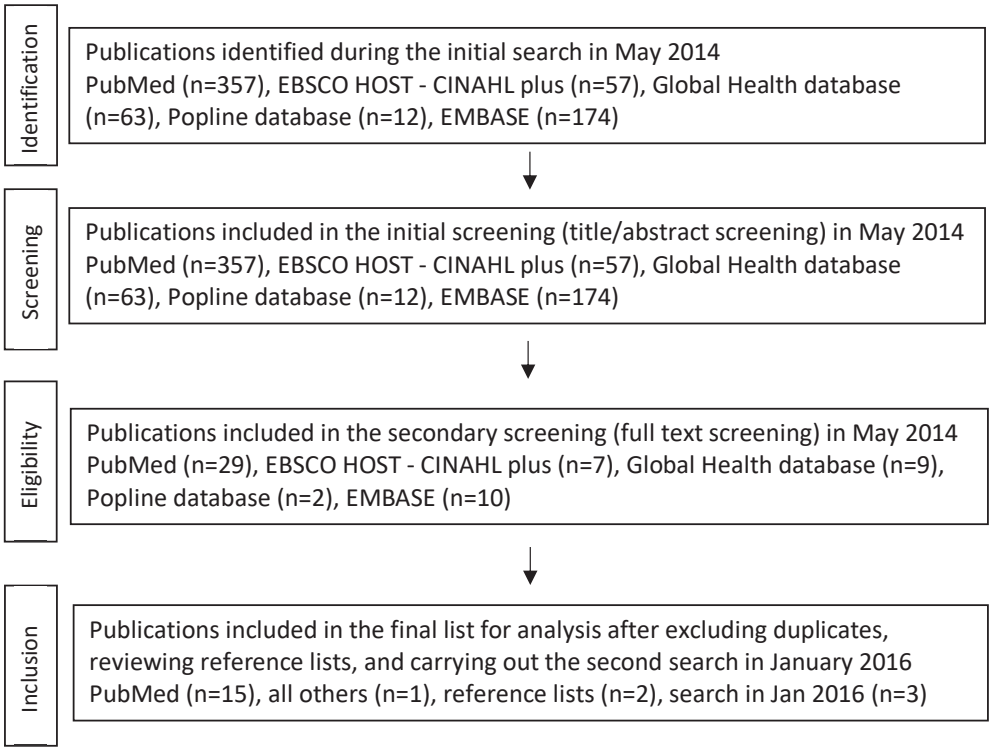

Figure 2.1: Flow chart of the systematic literature search

The two articles suggested as 'golden hits' prior to the review appeared during the search in 2014 and matched the inclusion criteria. This suggests that the search strategy was adequate. A detailed description of the articles can be found in Appendix A2. In the next section, the key characteristics of the articles are presented, followed by a narrative description of their findings related to availability, appropriateness, affordability, approachability and acceptability of maternal care in Eastern European countries.

General description of the selected articles and quality assessment

The overall characteristics of the articles included in the review are presented in Table 2.1. The table shows that most articles (67%) were published between 2009 and 2014, indicating up-to-date results and an increased interest in the topic. Despite searching for publications in the entire Eastern European region based on all selected countries (see Introduction), no eligible studies were found for Armenia, Bosnia and Herzegovina, Croatia, the Czech Republic, Estonia, Latvia, Moldova, Montenegro, Slovakia and Slovenia. This suggests that up-to-date evidence on this topic is lacking for a large part of the Eastern European countries. Most of the evidence (71% of the studies reviewed) comes from the Eastern European countries outside the EU. The majority of the data were collected in healthcare organisation settings while one cross-country study does not mention any specific setting. More than half of the publications directly aimed to examine the quality, access and/or patient payments for maternal care while others provide a general view of maternal health service in Eastern European countries.

Table 2.1: Overall characteristics of the 21 articles included in the review

Characteristics of the publication	Number of publications (%)	Publication reference number (See Appendix A3 for reference list)
Year of publication		
2014 - 2016 2009 - 2013 2004 - 2008	4 (19) 11 (52) 6 (29)	[1; 19; 20; 21] [2,3,4,5,6,7,8 9,10,11, 12] [13, 14, 15, 16,17, 18]
Origin of the study		
EU Eastern European countries (Bulgaria, Lithuania, Hungary, Poland, Romania) Non-EU Eastern European countries (Albania, Azerbaijan, Belarus, Georgia, Kosovo, Macedonia, Russia, Serbia, Ukraine)	7 (29) 17 (71)	[4, 5, 6, 9, 12, 14, 20] [1, 2, 3, 4, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 21]
Research setting		
Healthcare organisation Rural areas and/or urban areas (e.g. households) Other Unclear	13 (54) 9 (38) 1 (4) 1(4)	[1, 2, 7, 9, 10, 11, 12, 13, 14 15, 16, 19, 20] [3, 5, 6, 7, 8, 16, 17, 20, 21] [4] [14]
Study objective		
To examine quality and/or access indicators and/or patient payments for maternity care To construct a general view of the reproductive/ maternal health service situation To explore the implementation of maternal health guidelines To implement family medicine based antenatal care	12 (57) 7 (33) 1 (5) 1 (5)	[1, 8, 3, 5, 18, 6, 7, 9, 11, 12, 20, 21] [4, 13, 14, 15 16, 17, 19] [2] [10]

Table 2.2 provides a summary of the methods of data collection and analysis used in the 21 articles, showing that a qualitative study design was most often used. The studies mainly include mothers, healthcare professionals and, to a lesser extent, key informants and secondary data sources. The sample size ranged from a few dozen to a few thousand

participants, but most studies include less than 100 participants, due to their qualitative approach. About 20% of the studies are narrative and systematic literature reviews. The systematic reviews cover a diversity of issues and settings, and do not include all studies reviewed here. Interviews are the main data collection source in non-review studies. About 30% of the studies use questionnaires or existing datasets. Table 2.2 also displays the data analysis approaches that were applied.

Table 2.2: Summary of the methods of data collection and analysis used in the 21 articles reviewed

Characteristics of data collection	Number of publications (%)	Publication reference number (See Appendix A3 for reference list)
Study design		
Qualitative (interviews, open-ended questionnaires, focus groups, consultation)	7 (32)	[3, 4, 6, 7, 10, 17, 18]
Quantitative (literature review, systematic literature review, cross-sectional)	8 (36)	[5, 8, 11, 12, 15,19, 20, 21]
Mixed method approach	5 (23)	[1, 2, 9, 13, 16]
Unclear	2 (9)	[14, 19]
Study population		
Mothers, healthcare consumers	13 (37)	[1, 3, 6, 7, 8, 9, 10, 11, 12, 15, 18, 20, 21]
Healthcare providers	9 (26)	[2, 3, 7, 10, 13, 14, 15, 16, 18,]
Key informants	6 (17)	[2, 3, 7, 13, 16, 17]
Review of published and unpublished literature	5 (14)	[1, 4, 16, 17, 19]
Other	2 (6)	[1, 5,]
Sample size		
Less than 100 respondents	6 (27)	[1, 2, 3, 6, 7, 13]
100-1000 respondents	6 (27)	[9, 11, 12, 14, 18, 20]
More than 1000 respondents	5 (23)	[5, 8, 10, 15, 21]
Review of published and unpublished literature	5 (23)	[1, 4, 16, 17, 19]
Method of data collection		
Interview	9 (26)	[1, 2, 3, 7, 9, 13, 16, 17, 18]
Questionnaire, survey	6 (17)	[2, 9, 11, 12, 15,]
Focus groups	4 (11.5)	[2, 6, 7, 18]
Patients records, administrative files, official guidelines	4 (11.5)	[1, 10, 14, 19]
Existing dataset (e.g., national surveys, published studies)	7 (20)	[1, 5, 8, 16, 17, 20, 21]
Literature review	5 (14)	[4, 9, 16, 17, 19]
Method of data analysis		
Qualitative techniques (e.g. framework analysis)	7 (33)	[3, 4, 6, 7, 10, 17, 18]
Quantitative techniques (statistical analysis)	8 (38)	[5, 8, 11, 12, 15, 19, 20, 21]
Mixed approach (qualitative + quantitative)	5 (24)	[1, 2, 9, 13, 16]
Unclear	1 (5)	[14]

The studies were appraised for internal and external validity and reliability, based on the CASP appraisal checklist for qualitative studies and the EPHPP appraisal checklist for quantitative studies. Only two qualitative studies were found to be of high quality.[22,25] while the rest was mostly of a medium level of quality. Four qualitative studies scored poorly on the checklist due to insufficient information.[65-67] No qualitative study addressed ethical questions or the researcher's role in the study. Quantitative studies mostly applied cross-

sectional study designs (non-experimental designs), leading to a lower quality score for these studies. However, the data analysis methods and validity issues were also poorly addressed in some of these publications, which further lowered their quality score. Articles reporting on mixed method studies were appraised stepwise, i.e. the qualitative and quantitative parts were assessed separately. Validity and methodological aspects in these studies were often poorly addressed or rated too positively by the authors in terms of quality. Another weakness was the lack of discussion of study limitations and methodology. Overall, the lack of transparency regarding the research methods applied was a key problem in the studies reviewed, which however did not necessarily mean poor study quality.

Availability of maternal care

On the availability of adequate maternal care, the articles reviewed suggest that most Eastern European countries face problems with the geographical accessibility of adequate services despite the geographic diversity of these countries (e.g. Parkhurst, Penn-Kekana, et al., 2005).[66] Such problems are reported in 70% of the articles. It should be noted however that evidence on this issue is controversial. While for example in Serbia, the maternal wards are spread all over the country and available even in small villages, in Kosovo the maternal care provision is irregular, vehicle ownership in rural areas is rare and transportation facilities between rural and urban areas are lacking.[22,65,67] However, that maternal wards are well distributed throughout the entire territory of Serbia does not ensure that all services offered are adequate and of good quality. In Russia, although accessibility has improved, geographical access to care in rural areas can be difficult .[68] Women living in rural areas in Azerbaijan and Ukraine are often late in seeking maternal care due to transportation problems.[21,69] Lithuanians from Kaunas report minor distance and time barriers for visits but also indicate problems due to busy work schedules of health professionals.[70] Roma populations in the Balkan countries (as has been documented for Albania, Macedonia and Bulgaria) often face geographical accessibility problems. This primarily refers to the lack of health professionals in the Roma settlements and emergency care providers refusing to travel to their place of residence.[17] However, as we will discuss below, challenges of geographical accessibility tend to pale in comparison with the socio-economic factors that provide barriers to approachability and affordability. Accessibility problems in Belarus are relatively minor due to the increased national healthcare expenditure, but transportation in case of emergency is still problematic.[71]

In addition to problems with the availability of services, problems related to waiting times are also reported. Serbian women face time-related problems regarding referrals, which they have to show in order to be admitted in maternity wards, but referrals expire after a while and are often outdated due to the unpredictability of childbirth.[22] Women in some Eastern European countries (e.g. Serbia and Russia) need to wait for a free

bed or necessary medical procedures.[22,72] However, Roma women in Balkan countries frequently have to wait longer than others due to their ethnicity.[25]

Appropriateness of maternal care

Another problem in maternal care in Eastern European countries is the unavailability of appropriate maternal care services. For example, in Russia, evidence based up-to-date maternal care is practically absent especially in rural areas due to a lack of diffusion of new knowledge among professionals. Even students are taught to work in an old-fashioned manner.[73] Overall, the availability of adequate care is linked to the education of health professionals and when curricula are outdated, professionals are unable to contribute to the improvement of services they provide.[74] Substandard and outdated care in Eastern European countries (e.g. Russia, Serbia and Ukraine) includes performing routine enema, shaving and recruitment bed position.[21,22,75] A study in Serbia also indicates an overall unavailability of skilled nurses who could help the mothers with immediate breastfeeding.[22]

Some improvements have however been observed in recent years, mostly as a result of international projects. For example, in some urban health facilities in Ukraine, women are offered a choice with regard to birthing position, improved facility conditions, easier access to necessary services, occasional visits and partner's presence during childbirth as well as stimulation of breastfeeding.[21] Small-scale improvements in this direction are reported in other countries as well, for example in Serbia.[22] Russia has undergone significant system changes and succeeded in improving maternal health system with an increase in accessibility and quality evidenced by positive changes in maternal and child health (more than 50% decrease in MMR).[68]

Another factor that hinders the availability of adequate maternal care in Eastern European countries relates to the inefficient allocation of maternal care funding. Studies in Russia report that about 10 years ago, there was an overprovision of maternal care services, twice more midwives than in Western Europe and an extensive infrastructure inherited from the Soviet times, while still having comparably poor health outcomes.[66] However, as reported in a more recent article, there is a considerable decrease in MMR due to better trained medical staff and the introduction of care standards. Furthermore, more than 25% of Russia's population lives in rural areas, therefore, a more even distribution of healthcare units in non-urbanized areas has led to improved availability of appropriate care.[68] At the same time, public funds for necessary medication and modern equipment, especially in rural areas, are insufficient. This imbalanced resource allocation is reported not only in Russia but also for example in Ukraine.[21,75] Results from Kosovo show that the inefficient allocation of resources results in antenatal care being available only in urban areas, with a lack of ambulance services and limited primary care in rural areas.[65,67]

Affordability of maternal care

The majority of the articles reviewed argue that affordability of services is a key barrier to accessing maternal care in Eastern European countries. In many countries, basic maternal care services are formally free of charge. In some countries, however, formal OOP payments are required for extra services. In Poland for example, anaesthesia and epidurals have to be fully paid OOP.[76] In addition, some population groups fail to obtain health insurance. For example, the majority of the Roma populations in the Balkan countries and 10% of the population in Russia (young mothers, migrants) are being reported to lack insurance coverage and have to pay maternal care entirely OOP.[17,25,66] In some Eastern European countries, maternal care in general is not provided for free and women have to pay formal charges. As a result, in 2003, maternal care access in Azerbaijan and Moldova depended on the wealth gradient (78% OOP payments). Data from 2003 shows that women in Georgia contributed up to 80% the OOP payments. Although the situation in these countries might have improved since then (no recent data could be found), overall, the articles suggest that in case of direct charges, maternal services become unaffordable for most women, causing care interruption or delay.[77] In the Balkan countries, like Serbia and Macedonia, additional charges at the institutionalized level exist for the attendance of a 'guest' at birth.[22,25] For the Roma population, in particular, this attendance seems to be extremely important, but being unable to pay, creates an unwillingness to have facility-based births.[25]

Informal payments are also prevalent in Eastern Europe and impose an additional burden on poor population groups, making care unaffordable.[76] The reasons for these payments include low-paid medical staff and gaps in maternal care funding.[66,72,76] A study in Poland reports on social beliefs that access to good services depends on the ability to 'bribe' healthcare professionals.[76] These informal payments seem to be more common in the maternal sector due to the planned nature of care and the prolonged contact with healthcare providers.[66] Belarus reports minor informal payments while such payments are reported to be high in Ukraine.[21,71] Women have a rather negative attitude towards monetary informal payments, but they do pay to avoid 'substandard care' and to assure a child's safety or quick access.[21,22,72,77] Thus, good specialists and necessary procedures can become unaffordable for people who cannot pay those informal costs.[21] In Ukraine, the amount of informal payment is agreed through bargaining before birth to avoid inconveniences and is mostly paid to the obstetrician who later divides the payment among the hospital team present during the birth.[21] In Hungary, the amount of informal payment is based on income and education; therefore, people with higher status appear to pay higher 'prices'.[78]

Approachability and acceptability of maternal care

In the studies reviewed, care acceptability problems in Eastern European countries are frequently attributed to cultural and ethnic differences. Maternal care could be available and affordable but is sometimes not accessible due to a variety of psychological and individual aspects including discrimination towards Roma women. As reported in studies

from Balkan countries, Roma women are often denied services and have to give birth on their own, which increases the risk of mortality.[17,25] For example, in Bulgaria, Roma women have to bring their own consumables to the hospital while other women do not have to do so. Discrimination is also a reason for verbal abuse or denial of standard care for this group of women in healthcare institutions. In Bulgaria, Roma women give birth in 'Gipsy rooms' with poor conditions. A discriminatory attitude toward Roma women and a derogative attitude create stigma and cause barriers to the use of maternal care. Not being accepted results in an unwillingness to accept the care needed and prolong the delay in seeking maternal care services.[17,25] A recent study demonstrates a worrisome magnitude of prenatal care underutilisation in Romania, which is mainly due to demographic factors. The care that is available is unused by the most vulnerable groups of society – the young, poor, uneducated and members of ethnic minorities.[18]

Psychological accessibility barriers also come from poor communication and relationships between professionals and mothers even when the mothers do not belong to the Roma populations. In Serbia for example, communication with patients in general is inadequate and derogative and providers lack skills to interpret mothers' needs and behaviours.[22] Poor bedside manners, disrespect for woman's privacy and cynical nicknames towards the mothers are reported in other countries as well, causing mistrust in the care provider.[17,25,66,72]

Maternal care is also frequently expert-cantered and technically oriented, creating a distance in the relationship between the physician and the expecting mother and leaving questions unanswered. For example, in Ukraine, pregnant women experience a lack of information about maternal services and birthing in general, which pushes them to find answers in blogs and other web-based sources that are not always reliable.[21] Also in Russia, limits to women's knowledge due to a lack of information or generally low level of health literacy are reported as a barrier to accessing necessary maternal care.[11] Even though the situation in Russia has improved, the most disadvantaged in this respect are the ones living in remote areas and/or being poor.[68]

Furthermore, the willingness of having a child, gender equality and women's autonomy is another issue that limits maternal care acceptance and information seeking.[17,69] A study in Albania reports that women receive maternal care of poorer quality than elsewhere in Europe, which is determined by women's empowerment and decision making at home. Roma women for example often lack health education and are not always aware of the need for maternal care.[23] Since in their living environment the decision-making autonomy is in the hands of men and it is culturally acceptable to handle pregnancy without a professional, the chances of seeking professional care are reduced.[17] Studies in Belarus and Azerbaijan also indicated that lower education seems to be a hindering factor for seeking maternal care early.[69,75]

2.4. DISCUSSION AND CONCLUSIONS

The evidence obtained through our systematic literature review on barriers to accessing adequate maternal care services in Eastern European countries indicates a variety of access-related problems. These include problems with reaching the healthcare facility due to distance, poor and derogative attitudes of providers of maternal care and waiting times. Furthermore, there is a lack of evidence-based care and, in some instances, outdated equipment and lack of pharmaceuticals. In some Eastern European countries, access is limited by mothers being unaware of the importance of care and cultural aspects that discourage the utilisation of health services. Specifically, some population groups, such as Roma women in the Balkans, are not well accepted by healthcare providers and face discrimination that limits their access to care. However, a major barrier in accessing maternal care in the Eastern European region is due to the inability to pay for it. This widely prevalent financial barrier can be seen in formal as well as informal OOP payments.

It should be noted however that most of the studies on this topic have applied a qualitative design and do not provide nationally representative Figures on the prevalence of barriers to access. In addition, some studies provide contradictory evidence. This is partly due to the ongoing reforms and changes. For example for the Russian Federation, earlier studies reported substandard and outdated maternal care,[73] while a more recent study reported on significant system changes and improvements in maternal care.[68,73] Furthermore, our review only included publications in English, so that relevant articles in other languages were not taken on board. There are also major gaps for many Eastern European countries for which no studies were available. For those countries for which we could identify previous work, some of it is beginning to be outdated. In view of these limitations, our findings cannot be generalized to the entire Eastern European region, but should only be taken as an indication of potential problems in accessing maternal care.

Our findings indicate the major gaps in evidence that exist and the need for the collection of more representative and better quality data. They also suggest the need for the further strengthening of research capacity in this part of Europe, including the publication of research in international peer-reviewed journals. Access-related indicators for the assessment of maternal care provision could be sought in terms of the availability, appropriateness, affordability, approachability and acceptability of maternal care. The conceptual framework of Levesque et al. (2013), which we applied in our search and analysis of publications, appears useful and relevant.[15] Further research is needed to explore the relevance of alternative conceptual frameworks and to define a set of tangible evidence-based indicators of access that have policy relevance.

The systematic monitoring of these indicators could be instrumental for the acknowledgment of access problems in Eastern European maternal care systems and could indicate the relevant areas for improvement.[11] The set of indicators that need to be developed should be universal, to allow for cross-country comparisons and identification of progress, but also country-specific, to allow for relevant assessment of maternal care at the national level. As indicated by our review, some access-related problems, such as geographical accessibility and affordability of care, are reported in several countries, while other problems, such as accessibility of Roma women to maternal care, are more country-related. It is also important that the set of indicators follows a broader and more systematic approach to the assessment of maternal care as recommended by previous research.[79-81] Indicators specifically focused on access to maternal care among vulnerable groups, such as ethnic minorities and poor women, should also be considered.

Governments in Eastern European countries need to establish a reliable system for measuring and monitoring suitable sets of indicators. As mentioned at the outset of this Chapter, such systems are not yet in place, as misreported or underreported data in the Eastern European maternal care sectors are still observed.[10,59] The focus should however not only be on maternal care. Medical curricula in the Eastern European region need to be overhauled to make sure that health professionals are trained in cultural sensitivity and interpersonal communication skills. This will be especially important for dealing with problems such as poor bedside manners and derogative communication. Governments will also need to take the responsibility to deal with the general social and economic problem of informality of which widespread informal patient payments are just one expression. Finally, governments in the region have to safeguard vulnerable population groups, especially ethnic minorities and those unable to pay, by ensuring universal access to maternal care.

3

Barriers to accessing adequate maternal care in Georgia: a qualitative study

The Chapter draws upon:

Miteniece, E., Pavlova, M., Shengelia, L., Rechel, B., & Groot, W. (2018). Barriers to accessing adequate maternal care in Georgia: a qualitative study. BMC health services research, 18(1), 631. DOI: 10.1186/s12913-018-3432-z

ABSTRACT

Introduction

The maternal health outcomes in Georgia are linked to shortcomings in healthcare such as inequities in access to adequate maternal care. Due to the macro-level, quantitative approach applied in most previous studies, little is known about the underlying reasons that influence maternal care and care-seeking behaviour of pregnant women.

Methods

This qualitative study explores the stakeholders' perspectives on access to adequate maternal care in Georgia. Focus-group discussions are conducted with mothers who gave birth within in the past four years and in-depth interviews are conducted with decision-makers and health professionals in the field. Five access-related aspects are studied: availability, appropriateness, affordability, approachability and acceptability of maternal care. The method of direct content analysis is applied.

Results

Results indicate problems with maternal care standards, inequalities across population groups and drawbacks in maternal care financing. This includes gaps in clinical quality and staff skills, as well as poor communication between women and health professionals. Geographical barriers to adequate maternal care exist in rural and mountainous areas due to the weak infrastructure (poor roads and weak transportation), in addition to financial hardships. Despite improvements in the coverage of maternal care, affordability remains an access barrier. Poorer population groups are financially unprotected from the high OOP payments for maternal care services.

Conclusion

These findings imply that micro-level indicators, such as disrespectful behaviour of health professionals and affordability of care, should be taken into account when assessing maternal care provision in Georgia. It should complement the existing macro-level indicators for a comprehensive evaluation of maternal care.

3.1. INTRODUCTION

The official MMR in Georgia is high, at 31 deaths per 100,000 live births in 2014 according to clinical data.[54] The MMR in Georgia is higher than in neighbouring former Soviet Republics such as Armenia (19 per 100,000 in 2014) or Azerbaijan (15 per 100,000 in 2014).[54] It is more than three times higher than the MMR average for the WHO European region (10 per 100,000 in 2014) and more than six times the EU average (four per 100,000 in 2014).[54] Yet, maternal mortality in Georgia might be even higher (with an estimated 36 deaths per 100,000 live births in 2015), as the official clinical or cause of death data undercount maternal mortality.[82,83]

The government has taken a number of steps to reduce maternal mortality and reach the Millennium Development Goal 5 (MDG5), which aimed to reduce the MMR by three quarters between 1990 and 2015.[52,54] Yet, the MMR remains higher than desired under the MDG5. The previous MDG5 fits within the current aim 3.1 of the Sustainable Development Goals 2015-2030 to reduce the Global MMR. Achieving the desired MMR target by 2030 requires an annual reduction in MMR of at least 7.5 %, which is double the progress of MDG5.[84] Interventions to achieve this include staff retraining, infrastructure development, screening programs, and free-of-charge access to basic maternal care services.[83]

The reasons for the high MMR in Georgia can be found at both the macro level (e.g. the availability of infrastructure, facilities and medical staff) and the micro level (e.g. the provision and use of services, communication, affordability, adequacy, awareness).[11,83,85,86] The high MMR in Georgia is also linked to inequities in access to adequate maternal care [52,83]. Adequate care is understood here as care with good clinical quality that meets medical standards and is delivered in accordance with the preferences of service users (the pregnant women).[87]

Previous studies in Georgia have confirmed that barriers to access adequate maternal care services contribute to poor maternal health.[83,85,88,89] Thus, the high maternal mortality risk is associated not only with physiological factors related to higher maternal age and poor pre-pregnancy health, but also with social factors, such as living in rural areas, low economic status and late care-seeking behaviour due to insufficient awareness or inability to pay. Quality of maternal care is another important aspect that causes a higher MMR risk.[34,52]

The Georgian maternal care system is rather complex and fragmented. The providers of maternal care include outpatient and inpatient maternity clinics in both the public and private sector, providing services within and outside the various state maternal care programs. The state programs are funded through annual state budget allocations and

cover free-of-charge access to basic antenatal care (four visits), food supplements (folic acid), antenatal and maternal screening, management of high-risk pregnancies, and birthing care (including C-section). Outside the state programs, pregnant women may use additional maternal services that are paid by the state Universal Health Care program, private insurance schemes or OOP payments. Similar to such countries as Ukraine, maternal care in Georgia also seems to follow the so-called "technocratic model", which stresses a "mind–body separation and sees the body as a machine".[90,91] According to this model, the obstetrician/gynaecologist is the key professional during the whole maternal period. Midwives have only a limited or no involvement in the maternal period. Midwives can be involved in childbirth but also then play only a secondary role, except when the obstetrician is not available. In line with the technocratic model of care, the structure of obstetric services differs from international standards of de-medicalisation, and the goal to minimize interventions, avoid unnecessary interventions, provide "evidence-based care as well as intellectual, emotional, social, and cultural needs of women, their babies, and families".[21]

Although the use of antenatal care has increased since the state programs started funding four antenatal visits, about a quarter of pregnant women still do not receive such care in the first trimester and about 15% of pregnant women do not have at least four antenatal visits.[92] Furthermore, in 2010, around 2% of pregnant women, increasing to 5% among ethnic minority groups (mostly Armenians and Azeri), had a home childbirth without a skilled birth attendant.[83] This might help to explain why one fifth of maternal deaths occurs among ethnic minorities. Potential reasons for the higher share of home childbirths among ethnic minorities include lower socio-economic status as well as insufficient access to maternal care.[85]

According to the 2010 Reproductive Health Survey, the use of postnatal care in 2010 was only 23% and only a small share of women reported adequate counselling experience.[83] Moreover, gynaecological routine visits outside pregnancy remain low in Georgia (24%). Such visits are important contributors to the outcome of pregnancy, especially if there are gynaecological conditions present that negatively affect pregnancy.[83,85]

Another problem is the existence of high OOP payments for health services, which undermines access to care for the poorest population groups.[52,88] Georgia stands out among the former Soviet Republics as the one with the highest share of private expenditures on healthcare,[93] reaching 79% of total health expenditure in 2014.[54] The 2010 Reproductive Health Survey found that 25% of pregnant women delayed the use of medical care, in the vast majority (82%) due to the high costs involved.[83] Despite the free-of-charge birthing care offered through the state maternal programs, maternal care providers (mostly the private establishments) frequently request extra OOP payments for the care received during birth.[83,88] In this regard, problematic pregnancies

are charged much higher by the providers, especially if the women need more than four antenatal visits and more complex childbirth care. Consequently, access to maternal care in Georgia is expensive and the state programs do not effectively protect women from this financial risk. Furthermore, there are substantial differences in the quality of care between providers and women report difficulties in accessing those providers they deem well-qualified.[34]

In order to develop and implement well-designed policies and programs that address equity in maternal health access, it is necessary to understand the factors that generate and sustain barriers to maternal care use in Georgia.[52] Due to the macro-level, quantitative approach applied in most previous studies (some of those mentioned above), little is known about the underlying reasons and contextual factors that influence care-seeking behaviour of pregnant women in Georgia. Furthermore, since care-seeking behaviour is not only an outcome of individual decision-making, it should be investigated in the community, taking into account its cultural, social and political environment. This indicates the need for qualitative research to gain an in-depth understanding of access-related factors in maternal care in Georgia.[85,94]

The aim of our study is to explore stakeholder views on access to adequate maternal care in Georgia. We follow a qualitative research approach, based on data collected among women who have experienced childbirth within the last four years, providers of maternal care and decision-makers. This allows us to determine the extent of stakeholder consensus on barriers to access and underlying factors.

Levesque et al. distinguish five aspects of access to care, namely availability, appropriateness, affordability, approachability and acceptability.[15] A rather similar framework with slightly different aspects of access has been put forward by Obrist et al. and Putrik et al. among others.[24,95] As has been done in Chapter 2, this Chapter also applies the framework developed by Levesque et al. to study the barriers to accessing adequate maternal care in Georgia, operationalizing the five aspects of access in line with Levesque et al., as well as a review of recent literature on maternal care provision in Central and Eastern Europe (for illustration see the introduction, Figure 1.1).[15,53] The five aspects of access to care are further operationalised in Chapter 1 and Chapter 2 of this dissertation.

3.2. METHODS

This study follows an explorative qualitative approach and applies the method of directed content analysis,[96] based on pre-selected themes (the five aspects of access shown in Chapter 1, Figure 1.1). Ethical approval of the study was obtained from the Bioethical Committee of the National Center for Disease Control (NCDC) and Public Health of Georgia prior to data collection.

The data were collected in May-June 2015 in two urban settings (Tbilisi and Kutaisi) and one rural setting (Batumi area). Tbilisi is the capital city located in the eastern part of Georgia, Kutaisi is a central region of Georgia and Batumi is a region located in south-west Georgia. Two methods of data collection were used, allowing for data triangulation. First, focus group discussions (FGDs) were carried out with women who gave birth in the preceding years, to elicit what barriers (if any) to accessing maternal care they had experienced. This was complemented by semi-structured in-depth interviews (IDIs) with decision-makers and healthcare professionals to gain an understanding of their opinions about access to maternal care. We then identified similarities and differences in the opinions across the three stakeholder groups. This allowed us to gain insights from multiple perspectives and to better understand the study phenomenon. It gave a voice to the experience of stakeholders and offered the opportunity to explore the depth and complexity of access to adequate maternal care in Georgia.

In total, six FGDs were conducted, two in each study setting. Each group consisted of up to 10 women who had experienced their last childbirth within the preceding four years. One group in each setting consisted of women who had one child and the other group consisted of women who had two or more children. No criteria for age or economic status were applied to enable exploring possible access barriers among all women in their reproductive age and representing diverse income groups.

The contact details of the women were obtained through hospital registries, combining the methods of purposive and convenience sampling. The women were approached by one of the researchers via phone and were asked to participate. Women who agreed to participate were asked to reach out for someone in their social network who would meet the inclusion criteria and would be willing to participate. No refusal to participate was registered. All participants were asked for their verbal informed consent to participate prior to the FGDs taking place.

The FGDs were conducted in Georgian language. An experienced discussion moderator led the discussion and two researchers participated as observers. The discussions included questions that were developed in accordance with our operational definition of access to adequate maternal care (see Figure 1.1). The questions are presented in

Appendix B1. To facilitate the communication, during the introduction, all women were provided with cards to write down their names. The discussion started with stating the general purpose of the FGDs and establishing ground rules. After that, the topic was introduced and discussed based on the pre-selected questions. After each question, women were given time to note down their ideas, after which an open discussion took place. At the end of the discussion of each topic, the results were summarised verbally by the FGDs leader and at the end of the FGDs, the participating women were asked for additional comments or opinions. The discussions were recorded, transcribed and translated into English.

The IDIs followed the FGDs. Five decision-makers and four healthcare professionals were involved in the study. The decision-makers and healthcare professionals were selected through purposive and convenience sampling, based on their position and importance in the field of maternal care in Georgia. The decision-maker group consisted of two decision-makers from international institutions, namely the United States Agency for International Development (USAID) and the United Nations Children's Fund (UNICEF) Georgia, one decision-maker from the NCDC and two decision-makers from the Ministry of Health. The healthcare professional group consisted of three gynaecologists of whom two were also working at the medical university, and one member of the management team of the biggest maternity house of Tbilisi. In view of the "technocratic model of care" in place in Georgia, no midlevel providers such as midwives were included as participants in the interviews.[90]

The interviews were carried out in Tbilisi and Kutaisi, while the potential participant (healthcare professional) from Batumi region cancelled the interview and it was not possible to find another suitable replacement in the given time. Therefore, no interviews were conducted in this region. All interviewees were asked for written informed consent prior to the interview. Two researchers participated in the interviews, one of whom led the interviews. The IDIs included questions similar to those used in the FGDs (Appendix B2). Six interviews were held in English and three in Georgian. The interviews were recorded, transcribed and, where necessary, translated into English.

As mentioned above, the data collected through the FGDs and IDIs were analysed based on the qualitative method of directed content analysis.[96] The guiding themes for the content analysis were the five aspects of access to maternal care presented in Figure 1.1. The transcripts were first read to identify relevant information, which was then clustered according to the five themes. The categorised information was analysed and similarities and differences across the stakeholder groups identified. Participant quotes are displayed throughout the results section to provide a narrative presentation of key findings.

3.3 RESULTS

The two FGDs in Tbilisi consisted of 14 women in total, the two FGDs in the Kutaisi town of 15 women and the two FGDs in the rural Batumi region of 15 women each. The women in all FGDs were aged 19-42. The IDIs with maternal care professionals (four interviews) and decision-makers (five interviews) included both men and women of diverse age groups. The results are presented below in accordance with the five access-related themes and are illustrated with quotes. The full list of quotes can be found in Appendix B3.

Availability

Almost all women in the FGDs expressed their disappointment with the unavailability of postnatal care. This is a problem when, for example, women need support with breast-feeding or assistance with post-childbirth complications.

> *'I had problems with breastfeeding and it was a problem that there was no postnatal care which strikes most mothers' (FGDs, single child, Tbilisi).*

In the rural area of Batumi, specific services to manage complicated cases before childbirth are not available according to the participants in our FGDs. For these services, women have to make a journey to Batumi city or even to the capital, Tbilisi, which means a long-distance travel for these women to the very east of Georgia. Participants noted that these necessary services should be available closer to their home. However, even in the capital city Tbilisi, a participant noted an insufficient number of incubators and hospital beds. Due to the unavailability of hospital beds, women were discharged earlier from hospital or asked to find another institution. In addition, some women mentioned a shortage of staff (e.g. anaesthesiologists) in low capacity institutions, especially in rural areas.

Healthcare professionals also perceived human resources as an important problem, especially in rural areas.

> *'Some kind of services could be unavailable when needed; especially in rural areas some services are really missing and could contribute to access issues and therefore quality of healthcare. Human resources are an issue' (IDI, gynaecologist, Tbilisi).*

They mentioned that sometimes pregnant women who had overcome the spatial barrier in reaching a healthcare provider could not access the necessary care because the specific service was not available (e.g. obstetric ultrasonography, USG). This created another barrier or delays in healthcare utilisation.

Decision-makers identified the recent privatisation of the health system (which was implemented in 2007) as an additional barrier in terms of service availability, due to the freedom of providers to choose the type of services they want to provide based on their interest (thus, sometimes not providing maternal care). They also mentioned that assistance during pregnancy and the postnatal period was usually provided only by obstetricians, whereas inclusion of maternal care within family doctor services would improve accessibility. Overall, the opinions of health professionals and decision-makers regarding availability-related barriers were in line with those expressed in the FGDs.

> *'Family doctor involvement and assistance is not available for pregnant women, but would be useful to improve access (IDI, Health Ministry, Tbilisi).'*

The women in the FGDs indicated that access to maternal care was complicated for women living in rural areas, especially in high-mountain regions, due to large travel distances and a weak transportation infrastructure.

> *'Distance is an issue for women from rural areas, because in the capital the care is more adequate and modern than in rural areas (FGDs, single child, Tbilisi).'*

Furthermore, the travel costs are high; roads are of poor quality and public transport, if existent, has a very poor schedule and only a few destinations. In contrast to rural areas, care in the capital was reported to be more advanced and adequate. In the women's opinion, these were the main reasons why geographical distances could lead to delayed care-seeking behaviour and poor health outcomes.

Most decision-makers and health professionals agreed with the women that rural and high-mountain populations are more likely to face access barriers and inadequate maternal care. Both groups emphasized that even though most women could access some maternal care, the challenge was accessing adequate care close to their place of residence. Therefore, the rural population groups are most likely to experience pregnancy-related complications and the need to travel for suitable care. The representative of the Georgian Ministry of Health also highlighted the problem of a lacking transportation infrastructure and availability of care in various regions, especially in remote areas, which were important contributors to access barriers.

Only a few women from Tbilisi and Kutaisi reported not to have experienced any problems with service availability. One gynaecologist claimed that in his hospital all services were available at any time of the day. Somewhat similarly, a decision-maker stated that postnatal care officially existed in Georgia and was covered by the state, but that women had to be aware of the need for it, since it worked through self-referral.

There was a gap in policy implementation, because the information on the availability of postnatal services was not reaching all providers and women in need.

All participants agreed that there were no distance-related access problems in the capital city. Participating women from Batumi region who lived in suburbs or rural areas claimed that the distance to adequate care in Batumi city was not that long, which therefore was not a barrier. None of the FGDs or IDIs participants reported waiting lists for maternal care. Nevertheless, a clinical manager reported that women usually preferred to receive care in the area in which they lived. However, when they needed more advanced care available in the capital, the cost was the problem, not the distance they had to travel.

Appropriateness

Most participants stated that there were problems with the appropriateness of maternal care in Georgia. The women reported the need to search for adequate care because quality differed across the country, a city or even within an institution.

> *'Everywhere the care is not of good quality; you need to search for it' (FGDs, multiple children, Tbilisi).*

However, they noted that they were free to choose a physician, facility and the care they preferred, resulting in the need to find the best options for them. The adequacy of maternal care was also influenced by the conditions in the facilities, which were reported to have improved since the privatisation of healthcare. However, the participants still reported the existence of old, non-renovated buildings, unhygienic facilities and bathrooms that were out of order.

Despite the existing inadequacies in maternal care that, according to an advisor to the Ministry of Health, were more prevalent in smaller towns or rural areas, decision-makers argued that this did not create any barriers for women seeking care, as they were free to choose where to go. They claimed that inadequate maternal care in some facilities should not result in postponed or unused maternal care in a city. However, they conceded that quality of care might influence health outcomes. Health professionals added that inadequate antenatal care contributes to the high MMR in Georgia. Part of the problem was reported to be due to underqualified staff.

> *'In Georgia, maternal mortality is high due to low quality of antenatal care. Problems are not identified in time, because of underqualified staff' (IDIs, gynaecologist, Tbilisi).*

In contrast, other participants suggested that the adequacy of maternal care in Georgia was not a barrier to access. Some women reported that facility conditions had been

critical in the past, but that these had generally improved and were not a reason for not using maternal care services. Furthermore, some women highlighted that the free choice of healthcare providers and facilities meant that adequacy of care should not be a barrier. Some women also shared positive experiences, reporting that they were highly satisfied with the attitudes and conditions of the care they had received. Women often relied on advice from family or friends to avoid poor quality experiences.

> *'I knew a good doctor through friends and I was also very happy with the services, [I did not have any] negative experiences of quality or attitude' (FGDs, single child, Tbilisi).*

Decision-makers agreed that there should be no major adequacy problems due to the lack of infrastructure. However, they pointed out that what happened during antenatal visits was difficult to measure and that adequacy problems might be involved. Decision-makers also agreed with the women that, due to the free choice of care, a woman could "shop" for quality.

> *'Women that die have no attendance issues, the problem can be found in the quality of care and the poor recognition of health complications. It is important to know where to go for good care and not everyone knows those things' (IDIs, USAID, Tbilisi).*

Affordability

The majority of the women in the FGDs indicated that the financial aspect was an important barrier to accessing adequate maternal care. According to these respondents, the state programs covered only the basic needs of women, but all additional antenatal visits, tests and medications had to be paid OOP. Women claimed that maternal care could become a real burden for pregnancies with complications and for mothers from low-income families, especially those living in rural areas.

> *'I needed an extra test due to my high-risk pregnancy that was expensive. I had to pay OOP and I needed support from family, otherwise it was not possible (FGDs, multiple children, Tbilisi).'*

The rural population was seen as having limited possibilities to earn an adequate income. Therefore, even indirect costs, such as extra traveling costs of 20 lari (8 Euros) to reach the healthcare facility could be a financial burden. However, family members were reported to always support each other, which allowed a number of women to afford the necessary maternal care that otherwise in many cases would not be affordable. A woman in Tbilisi reported that due to the high costs of an unexpected C-section, she had to change her facility to a cheaper one, because she could not afford it.

Furthermore, another woman from Tbilisi reported that she was not able to afford the necessary laboratory tests that cost 2000 lari (800 Euros). During the FGDs, affordability was figured as an important barrier to accessing adequate care, which in some cases made women postpone necessary care until the issues became more serious and often even dangerous.

Decision-makers also viewed OOP payments, especially for high-risk pregnancies, as an important burden for vulnerable population groups.

> *'Providers are charging for additional visits and doing tests that add costs. It can be a burden for vulnerable population groups, such as the poor' (IDIs, USAID).*

The poor and those living in rural areas were more affected due to their low income and extra travel expenses. Furthermore, decision-makers claimed that pharmaceutical costs were in most cases paid 100% OOP and were not affordable for everyone. According to the IDIs, even in uncomplicated pregnancies, every additional antenatal visit, test or medical intervention that was not covered by the state programs, had to be paid OOP. Consequently, women were forced to postpone care and this might endanger their health and ultimately increase healthcare costs, if care became unavoidable. A clinical manager from one of the biggest maternity houses in Georgia pointed out that some women had to search for another, cheaper institution, because they could not afford the care in this clinic.

> *'In my facility, the price is high and some women cannot access the care here and have to go somewhere else. Universal coverage only covers basic needs' (IDIs, maternity house manager, Tbilisi).*

Despite a number of participants reporting affordability problems, several stated the opposite. A woman in Tbilisi spent around 600 Euros during her pregnancy, but said she was prepared to pay this price. She added that women who were able to pay more could choose more luxurious care options if they preferred. Some women argued that having private health insurance helped in covering maternal care costs. However, only those with a sufficient regular income could afford and purchase the insurance packages.

Some women in the FGDs stated that the state program for maternal care worked quite well and helped them to cover the costs that arose from complications or the necessity to be transferred to another institution. Some women reported that OOP payments often seemed high, but that this was not a reason not to use care. One woman added that childbirth is a happy event for which a woman is willing to spend money.

'My husband and me are working, therefore we do not face financial barriers (FGDs, single child, Kutaisi).'

A number of stakeholders in the IDIs agreed that every woman received basic care, so the lack of financial resources should not constitute an access barrier. They maintained that, since the new state program has been implemented, affordability has at least become a much smaller problem. At the same time, the program was a stimulus to seek care on time in order to be covered.

'We have the law that if a woman is delaying her care then the state program is not supporting her anymore and she has to pay OOP, and in that way, she is stimulated to seek care on time' (IDIs gynaecologist, Tbilisi).

However, these opinions clashed with those situations where women lacked money to purchase extra maternal care services or their condition fell outside the state program. Overall, the opinions of decision-makers and care providers were divided over the existence of affordability problems.

All FGDs participants denied the presence of informal payments, arguing that, since the privatisation of healthcare, all payments in Georgia have been official. However, a number of women reported that they showed voluntary gratitude to medical staff by giving gifts in kind.

Approachability and acceptability

In almost all FGDs, women reported that they had experienced inappropriate attitudes from healthcare staff and that they would not seek care in the same institution again.

'I experienced poor attitudes and ignorance by healthcare providers' (FGDs, multiple children, Tbilisi).

Decision-makers also reported problematic attitudes and poor communication by healthcare workers, which they believed to influence the quality of care and, ultimately, the health outcomes of women.

'Attitudes and responsiveness of healthcare providers, including the consultation time, is worrisome, which influences the delay in care and safety of women' (IDIs, NCDC, Tbilisi).

A gynaecologist agreed that, despite improvements, problematic attitudes from providers exist, especially in rural areas. Women were then not free to share their experiences or problems, further impinging on quality of care.

'Poor communication can influence quality of care and when women are unhappy due to poor communication they are not able to share their experiences or problems' (IDIs, gynaecologist, Tbilisi).

Approachability and acceptability problems with regards to information and communication were thus interrelated. The most important problems reported in the FGDs were related to a lack of information about maternal care, which resulted in delayed or irregular visits. Women reported that they sometimes did not understand what doctors meant and that they felt confused by all the medical terms. In addition to information acquired within social networks, the women expressed the wish to receive more education from healthcare professionals, which would help them throughout the pregnancy and during the postnatal period. For instance, women said they were uninformed about childbirth, breastfeeding and different programs that covered high-risk pregnancies.

'I don't know about programs covering high-risk women and if we are not informed about different programs we don't know what services we can have' (FGDs, multiple children, Batumi).

Healthcare professionals and decision-makers agreed that pregnant women, especially in rural areas, lacked information and education. They also agreed that this information barrier was causing care to be postponed, with potential complications. If a woman was not aware of her health condition, she was less likely to take any preventive measures or to engage in pro-active behaviour. The representative of the Ministry of Health explained that in the Georgian culture there was a general fear and poor trust in medical help. Thus, people had little understanding of the benefits of prevention, which could contribute to poor health outcomes.

All FGDs participants reported that they did not see any religious or cultural barriers to accessing maternal care and they did not think there were women who would not feel the need for professional care during pregnancy, childbirth and the postnatal period.

'I haven't heard of any cultural or religious reasons that could act as barriers to accessing maternal care, at least not for the Georgian population' (FGDs, single child, Tbilisi).

Despite the large information insufficiencies, a few women argued that they were very well informed about their pregnancy and the importance of antenatal visits. One mother reported a very positive experience with her physician who gave her daily check-up calls to advise on the use of medications. Women from Batumi said they had no complaints about inappropriate attitudes by healthcare providers.

'We are generally satisfied with the attitudes we encountered from our doctors' (FGDs, multiple children, Batumi).

One gynaecologist argued that the lack of information was unusual since women shared information within their social networks. Overall, health professionals and decision-makers agreed that in general women accepted maternal care, but they pointed out that it was not always timely or adequate.

'Even if the women are poorly informed during the antenatal and postnatal period, insufficient information is not a barrier to reject the institutionalized maternal care services' (IDIs, health ministry, Tbilisi).'

None of the IDIs participants thought that women were informed enough about maternal care. The lack of information seemed to increase the risk of delayed and insufficient care. However, none of the participants identified other factors, such as culture, religion or gender roles, as constituting barriers to accessing adequate maternal care.

3.4. DISCUSSION

The stakeholder views on access to adequate maternal care in Georgia reported above indicate several important problems that need to be addressed in future reforms. These problems are related to maternal care standards, inequalities across population groups and maternal care financing.

Maternal care standards

Our findings suggest that the standards of maternal care provision in Georgia are a major concern. This involves gaps in clinical quality and staff skills, as well as inadequate attitudes by health workers and poor communication between women and health professionals. These findings are in line with what has been documented in the literature, including the so-called "technocratic model",[90,91] mentioned in the introduction section of this Chapter. This model undermines the needs of women, their babies and families, which results in women not being in the centre of care. The model explains the highly-specialised model of care and the exclusion of midlevel providers such as midwives.[21]

Quality standards of medical care and medical technologies in Georgia are not regulated by law and service providers, including those in the private sector, are responsible for setting their own indicators.[52] However, it should not be overlooked that many women seem to comply with two international standards: four antenatal care visits and skilled childbirth. Maternal care providers who are well known for their good services are reported to increase their prices, but more expensive services do not always secure

higher quality standards.[52,85] The existing evidence supports our participants' arguments that medical staff have poor professional standards due to the lack of continuous education programs in the Georgian health system.[97] The low salaries of healthcare professionals also demotivate them to perform adequately.[34]

The literature also supports the finding from our study that the information that women in Georgia receive about the importance of adequate maternal care is insufficient, especially among those with lower levels of education and populations living in rural areas. This may lead to delayed care-seeking behaviour and overlooked complications, which may result in poor health outcomes.[65,85] None of the women and only one decision-maker in our study had information about the existence of postnatal services. In the literature, it is reported that only about 20% of women who had given childbirth in Georgia use postnatal services. There might be a problem with the implementation of maternal care programs and the dissemination of related information.[52,85] Poor health literacy of maternal care users is aggravated by problematic attitudes of healthcare providers. Due to disrespectful behaviour and miscommunication of some maternal care providers, women may tend to mistrust healthcare professionals and be unwilling to share their thoughts and preferences for care. This communication barrier might be another reason that prevents women from receiving adequate care and early detection of complications.

Nevertheless, throughout the findings, there are also indications of new and positive developments. Thus, overall there are mixed findings on quality of care - there are improvements (e.g. improved coverage of care, increased use of maternal care services, reduction of informal payments, free choice of institution and healthcare provider, improvements in the conditions of facilities and also some improvements in the attitudes of healthcare staff), in addition to the challenges outlined above.

Rural, mountainous and minority population groups

According to our study, geographical barriers to access maternal care only exist in rural and mountainous areas. The distance to urban maternal care facilities that provide the necessary care can be a problem for people living in these areas due to the weak infrastructure (poor roads and weak transportation) combined with financial hardships.[85,97] Such rural and mountainous areas suffer from a shortage of medical staff and adequate equipment, and only limited healthcare services are available. Even though Georgia has an oversupply of medical doctors, there is no incentive for them to work in the distant rural areas. Many of those who choose this option lack skills to provide adequate support to women and to manage pregnancy complications.[34,52,97]

It has been suggested that many maternal care services could be handled by family doctors to improve geographical access and efficiency. Currently, these providers are not involved in the provision of maternal care.[52]

Georgians do not seem to have problems with utilizing maternal care, at least as far as antenatal care and childbirth are concerned. This is supported by official statistics showing almost 100% use of antenatal care and professional birth attendance during childbirth.[85,98] However, the literature also suggests that the use of maternal care services might be an issue for women from other cultures (ethnic minorities).[85] Minority groups were not among the study participants and therefore this remains an open question.

Maternal care financing

Both in rural and urban areas, good quality medical equipment seems to be frequently unavailable. This might be due to the underfunding of the healthcare sector and the inefficient use of resources.[65] Despite improvements in the coverage of maternal care, affordability remains an access barrier. Poorer population groups are financially unprotected from the high OOP payments in the healthcare sector and therefore suffer from the high costs of accessing adequate healthcare, including maternal care services.[52,65,97] In particular, all additional antenatal care visits (beyond the four visits covered), all medical tests, medications and extra child-birth costs are being paid OOP. Vertical programs (also known as stand-alone programs or vertical approaches) in Georgia cover cases with serious complications, which may encourage women to postpone care-seeking behaviour.[85,99]

In 2016, the WHO came up with new recommendations on antenatal care for a positive pregnancy experience, which include antenatal care models with a minimum of eight visits. The eight-visit plan aims to reduce maternal mortality and improve women's experience of care.[19] This plan could potentially be realised in Georgia as many women in Georgia already receive nearly ten visits following the physician's request.[99] However, the current model is based on the previously mentioned standard of four-visits that are publicly financed free-of-charge to patients. As mentioned above, after this number of visits women pay for every additional visit OOP and these payments remain a considerable burden for households due to the additional antenatal care visits and fees for "personal doctors". The implementation of the new WHO standard would mean an extension of a basic antenatal care package from four to eight visits, but it is not certain how feasible this would be for a resource-constrained country such as Georgia.[99]

Those participants in our study who claim that adequate maternal care in Georgia is affordable might see it from their perspective only and overlook the situation of the very limited resources some women have. Women who are satisfied with the amount of OOP payments during the maternal period most often have a stable income that allows them to afford the care they need.[97] Overall, informal payments do not seem to be contributing to barriers to accessing adequate care.

Relevance of the study to other settings

Although our study focuses on Georgia, given the general theoretical framework applied, it may be relevant to researchers and decision-makers in other countries as well. Our results show the importance of micro-level indicators, such as disrespectful behaviour by health professionals and their attitudes towards pregnant women, as well as women's trust in maternal care providers and care acceptability. In addition to existing macro-level indicators, e.g. the numbers of providers and facilities in the country, such micro-level indicators have to be taken into account for a comprehensive evaluation of the provision of maternal care. This is especially relevant for countries in Eastern Europe where maternal care problems might remain concealed by comparatively good macro-level indicators.[10,53,55]

Strengths and limitations

Our study has several strengths and limitations. The qualitative design allowed us to capture a rich and detailed picture of the researched topic. However, the small number of participants and settings covered makes it difficult to generalize findings. The quality of the data collection and analysis is highly dependent on the researcher's skills. This bias was mitigated to some degree by involving two researchers during the interviews and focus-group discussions, and an experienced discussion moderator. We also acknowledge possible recall bias and the potential for socially-desirable answers in both, the focus-group discussions and the interviews. A part of the interviews was held in English, which might have created a language barrier for some respondents. The rest of the interviews and all of the focus-group discussions were transcribed in Georgian and then translated into English, due to which some nuances might have been lost. An important advantage of our study was the possibility to triangulate the opinions of the three stakeholder groups, which allowed for a broader view on access-related problems in maternal care in Georgia to emerge, as well as for the validation of findings.

3.5 CONCLUSIONS

The study presented in this Chapter has explored stakeholder views on access to adequate maternal care in Georgia. Based on Levesque et al. (2013), we distinguished five groups of access domains related to availability, adequacy, affordability, acceptability and approachability of maternal care. We used these domains to examine the views of maternal care stakeholders and to identify key barriers to accessing adequate maternal care. Our findings indicate the existence of a number of barriers, including inadequate quality standards, low government funding, and gaps in coverage for specific population groups. These shortcomings in maternal care in Georgia may help to explain the high maternal mortality in the country.

Problems in maternal care provision involve the lack of equipment, human resources and evidence-based treatment. Geographical distance is also problematic for rural and high-mountain population groups due to care being concentrated in the capital city, weak transport infrastructure and high traveling costs. In addition to this, Georgian women have to carefully select an available provider of care to avoid problems such as inadequate attitudes, poor clinical quality or appalling conditions at the maternal care institution. This will be challenging even for well-off and better informed and educated women, but even more so for women with fewer resources and provider options. Gaps in the knowledge and skills of health professionals, the low health literacy of women and the resulting communication problems may prevent women from receiving high-quality care, which may contribute to poor health outcomes.

These findings imply that micro-level indicators, e.g. disrespectful behaviour by health professionals, their attitudes towards pregnant women, women's trust in maternal care providers and care acceptability, should be taken into account when assessing maternal care provision in Georgia. Such micro-level indicators should complement the existing macro-level indicators for a comprehensive evaluation of maternal care, both in Georgia and in other countries.

4

Barriers to accessing adequate maternal care in Latvia

The chapter draws upon:

Miteniece, E., Pavlova, M., Rechel, B., Rezeberga, D., Murauskienė, L., & Groot, W. (2019). Barriers to accessing adequate maternal care in Latvia: A mixed-method study among women, providers and decision-makers. Health Policy, 123(1), 87-95. DOI: 10.1016/j.healthpol.2018.10.012

ABSTRACT

Introduction

Latvia has a high maternal mortality ratio compared to other European countries, as well as major inequities in accessing adequate maternal care. Adequacy refers to the extent to which services are safe, effective, timely, efficient, equitable and people-centred. This study aims to explore stakeholder views on access to adequate maternal care in Latvia and the extent to which there was consensus.

Methods

This mixed-method study is based on an online survey among women who recently gave birth, as well as interviews with healthcare providers and decision-makers. The data were analysed using the method of directed qualitative content analysis. The extent of stakeholder consensus was determined by studying five access-related aspects of maternal care: availability, adequacy, affordability, approachability and acceptability.

Results

Our study identified barriers to accessing adequate maternal care related to availability (i.e. shortage of human resources, geographical distance) and appropriateness (i.e. inequalities in provider knowledge, care provision and use of clinical guidelines). Other challenges were related to providers' approaches towards women (i.e. communication) and, to a lesser extent, maternal care acceptance by women (i.e. health literacy).

Conclusions

The barriers identified in our study highlight areas that should be addressed in future reforms of maternal care. These barriers also indicate the need for micro-level indicators that can facilitate a comprehensive evaluation of maternal care in Latvia and elsewhere.

4.1. INTRODUCTION

In Latvia, poor maternal health outcomes co-exist with inequities in accessing adequate maternal care.[54,56,57,100] As mentioned in previous Chapters, maternal care entails health services provided by a physician (e.g. obstetrician or general practitioner) or midwife in an outpatient practice, hospital or maternity institution, to a woman during her pregnancy (antenatal care), childbirth and up to 42 days after childbirth (postnatal care).[101] By adequate maternal care, we mean the extent to which services are safe, effective, timely, efficient, equitable and people-centred.[12] Estimates of the MMR in Latvia differ between sources, ranging from 18 per 100,000 live births (in 2015) to 31.3 per 100,000 live births (in 2013-2015).[8,37,102,103] However, all estimates are higher than the average of the WHO European region (17 per 100,000 in 2015) and far above the EU average (8 per 100,000 in 2015).[8] In 2013-2015, 35% of maternal death cases in Latvia were women without antenatal care, while another 15% had limited access to maternal care. Problems related to disability, socio-economic and lifestyle factors were identified in 75% of maternal death cases.[37]

Maternal health has been declared a national priority in Latvia, and all pregnant women are entitled to publicly provided and publicly funded maternal care.[36] Evidence indicates that outpatient maternal care services are better remunerated than other healthcare services, which increased the interest of private providers to contract with the national health service for antenatal care provision, especially since the introduction of the "money follows pregnant women" initiative in 2012.[104,105] Maternal care services are mainly provided by gynaecologists/obstetricians. In institutions with state funding, maternal care services are free of charge to users. Women have the right to choose their provider, but if they choose a maternal care provider in the private sector who has no contract with the public sector or if they require care which at that time is only available in the private sector (e.g. by endocrinologist), all services have to be paid for by the women themselves. In the public sector, they also have to cover the cost for extra services or services of increased comfort (e.g. additional ultrasounds, private room at hospital, contract with providers). Medication requires 75% OOP co-payment and the average stay in an inpatient facility is 3-4 days after a vaginal birth and 5-7 days after a C-section. In case of a planned C-section, women are admitted to the inpatient facility a day prior to the procedure.[106] Irrespective of whether the provider of maternal care is public or private, minimum standards of care apply, as determined by the Cabinet of Ministers Regulation No. 611. These minimum standards address requirements for healthcare providers and the routine care provision during each antenatal check-up, childbirth and post-natal check-ups. According to these rules, women are entitled to a minimum of seven antenatal check-ups and all necessary tests during this period, institutional birth with a free-of-charge stay in a shared room, regular check-ups at a facility and a minimum of one postnatal visit.[105,107] Breastfeeding is encouraged and

facilitated at the inpatient facility after birth and through online reading materials (e.g. e-books, documents, regulations) along with other useful information on the maternal period available on various government websites. In addition, maternal courses - that are available for a small fee - and maternal care providers are an important source of information to women in their maternal period.[105-107]

Yet, the maternal care sector shares many of the shortcomings of the wider health system. There is an overall lack of financial resources, with current health expenditure (including OOP payments) reaching only 5.8% of GDP in 2015.[8,108] The substantial OOP payments in healthcare (41.6% of current health expenditure in 2015, mainly for pharmaceuticals and necessary care outside the public sector) are major barriers to access.[35,100] There are also long waiting lists for healthcare services, in addition to geographical inequalities due to a declining population and an urbanisation in care provision. A lack of healthcare providers exists as well, especially in rural areas. Another challenge is the inadequate quality of care (especially for inpatient care), as a result of low public investments and an insufficient use of evidence-based medicine and medical guidelines.[35,100,104]

Regarding maternal care, in 2016, there were 21,442 live births, of which 0.7% were without and 6.7% with incomplete antenatal care. Importantly, 18% of pregnant women aged 15-24 reported having smoked during their pregnancy, while 0.1% consumed alcohol and 0.8% used illicit drugs.[109] The high incidence of infectious diseases (in particular HIV/AIDS and hepatitis C) that can be especially harmful during pregnancy is another challenge for maternal care.[35,100]

Despite the maternal care problems in Latvia, no study so far has provided a comprehensive investigation of this topic. Our study starts addressing this shortcoming. It aimed to explore access to adequate maternal care by studying stakeholders' views and the extent of consensus on this topic.

4.2 METHODS

This explorative mixed-methods study describes and interprets the experiences and views of study participants in order to gain insights into access to adequate maternal care in Latvia.[86,93,110] The design combines multiple perspectives to better capture the depth and complexity of the topic.[111,112] It involved women who gave childbirth in the previous four years, as well as healthcare providers and decision-makers. As in Chapters 2 and 3, also the study described in this Chapter employed the same conceptual framework for data collection. The framework developed based on Levesque et al. where availability, appropriateness, affordability, approachability and acceptability are the five key aspects of access to adequate maternal care is visualised and explained in Chapter 1, Figure

1.1.[15] The study furthermore applied directed qualitative content analysis (also known as thematic analysis).[96]

Prior to the study, ethical clearance was obtained from "Riga Stradins University ethical committee" (No 49/29.06.2017). Data collection was conducted in June-August 2017 and consisted of two phases:

- an online survey among women who had their last childbirth in the past four years (2014-2017), with responses to open-ended and closed questions from 50 women included in the analysis;
- semi-structured face-to-face IDIs with seven healthcare professionals and six decision-makers.

The framework presented in Figure 1.1 was operationalised in both research instruments (interviews and online questionnaires). In both instruments, questions were formulated around each concept and the wording was adjusted for the different participant groups (see Appendix C1 and C2).

The respondents in the online survey were identified through Facebook "mommy" discussion groups and were recruited through a self-selection procedure. An invitation message with a survey link was posted in 48 Facebook "mommy" discussion groups that covered all five geographic regions of Latvia. This online survey approach was chosen due to being a time- and cost-efficient tool that generates easier access to a larger number of prospective participants, provides a higher level of anonymity and also allows participating through self-selection. The survey was designed for qualitative data analysis. The survey questionnaire included several open-ended and closed questions. Both, the IDIs guide and the online questionnaires had similar questions and were developed based on the research tools used in Chapter 3 [113]. Both research instruments were developed in English and then translated into Latvian by the main researcher who is bi-lingual in both languages. Furthermore, during the face-validity phase both instruments were tested and discussed with several persons in Latvia from the target groups. As a result, some minor textual adjustments were made in the Latvian translation.

The questionnaire was designed and disseminated using the Qualtrics® platform. At the beginning of the questionnaire, women were asked to provide informed consent for their participation in the survey. The survey questions were structured around the five key aspects of access to adequate maternal care (see Figure 1.1.) and participants were asked to share their experience and views from their last childbirth. Questions on socio-demographic characteristics were also included. The questionnaire concluded with a question on any additional experiences related to the topic. For ease of understanding, the questionnaire included lay definitions of the five aspects of access (see Appendix C1).

Similarly, as in Chapter 3, the IDIs were conducted with decision-makers and healthcare professionals who were selected through purposive and convenience sampling, based on their position and relevance in the field of maternal care in Latvia. In addition to questions related to the five aspects of access to adequate care, questions on maternal death registration and maternal care guidelines were added to help further explore the adequacy of maternal care (see Appendix C2). All interviews except one (conducted in English) were carried out in Latvian, recorded, transcribed and translated back into English. All IDIs participants provided informed consent.

The data collected were in Latvian and were analysed in their original (Latvian) form by the main researcher. The final results were then translated into English. The data were used to identify similarities and differences in opinions across the three stakeholder groups, applying directed qualitative content analysis (thematic analysis).[96] The interview transcripts and survey results were first read to identify information related to any of the five aspects of access presented in the conceptual framework (Figure 1.1), which were the study themes. The categorised information across the stakeholder groups was then synthesised. Results are presented narratively and illustrated in tables with participants' quotes.

4.3. RESULTS

The results are based on 13 IDIs with professionals and decision-makers and 50 online questionnaires by women who were part of Facebook "mommy" groups in Latvia and gave birth in 2014 - 2017. In total 622 respondents completed the survey. The first ten respondents of each of the five geographic regions of Latvia (Riga, Zemgale, Kurzeme, Vidzeme, Latgale) were selected for an equal geographical distribution and included in the study. We observed a sufficient level of saturation in the first 10 responses per region. The main characteristics of respondents included in the study are presented in Table 4.1. In addition, a comparison of socio-demographic characteristics between the women included and excluded from the study is presented in Appendix C3 along with the statistical tests that compare the differences between both samples.

Availability

Healthcare professionals and decision-makers claimed that in some rural areas there are no obstetricians or other maternal care services to manage complications. As explained by these respondent groups, women travelling to the capital city face long distances and public transport restrictions. The distance barriers combined with other factors (e.g. limited income, household and childcare responsibilities, and lack of awareness of the need for maternal care) sometimes limit the utilisation of care (see Table 4.2, quotation 2, 5-6). However, most women-respondents noted that they had no problems in accessing

Table 4.1: Main characteristics of respondent groups

IDIs participants' characteristics		(N)
Healthcare professionals	Midwife (public sector) Gynaecologist/Obstetrician (public sector) Gynaecologist/Obstetrician (private sector) Gynaecologist/Obstetrician (public & private sector) Neonatologist/Reanimatologist (public sector) General Practitioner	1 2 1 1 1 1
Decision-makers	Ministry of Health WHO country office Latvia WHO Regional Office Europe Management of Maternity Hospital Management of Gynaecology/Obstetrics clinic NGO for Reproductive Health	1 1 1 1 1 1
Women-participants' characteristics		**(N)**
Age	21- 41years	50
Education level	Lower than high school High school Professional degree Bachelor's degree Master's degree & higher	1 10 16 19 4
Children	1 -2 3 or more	44 6
Civil status	Living with partner/spouse Living alone	48 2
Household income	Up to €500 €501 - €1500 Above €1500	7 34 9
Last childbirth (when)	1 year ago, or less 2-3 years ago 4 years ago	34 16 0
Last childbirth (where)	(Maternity) Hospital Homebirth	49 1
Last childbirth (how)	Vaginal birth Caesarean section	36 14
Health problems in maternal period	Yes No	18 32
Antenatal visits	Less than 4 visits 4-7 visits 8-10 visits More than 10 visits	4 9 29 8
Postnatal visits	No visits 1-2 visits More than 2 visits	7 37 6
Maternal care sector utilised	Public Private Public and private	29 7 14

maternal care due to distance, transport infrastructure or time limits. A few women mentioned that they needed to travel to another city for ultrasound services in the public sector, or for a gynaecologist who treats high-risk pregnancies or is able to identify potential pathologies. In such cases, women faced difficulties accessing adequate and affordable maternal care due to long distances and a lack of time or transportation (see Table 4.2, quotation 9-11).

Table 4.2: Participant quotes about availability of maternal care

Decision makers
1. "There might be a barrier for women in rural areas where there are transportation restrictions, if she has no car, has limited income (as it is typical for those areas), if there are five children at home, a farm, and there are no maternal care providers in the surroundings (rural areas might face a significant lack of human resources)." (Management of Maternity House, public sector)
2. "There are such long waiting lists (up to 6 months) in publicly funded care, which is related to pregnancy and necessary to receive." (Management Gynaecology/Obstetrics clinic, private sector)
3. "Health professionals emigrate or simply do not want to work in hospitals, but in the private outpatient sector, so most of gynaecologists (maybe about 70-85%) work in the private sector." (WHO Latvia)
4. "Mother and child care is our national priority, no matter what happens we need to find resources to ensure the care. Two years ago, we had only about 70 general practitioners offering antenatal care services – we need time to get used to such thinking." (Ministry of Health)
Healthcare providers
5. "There is a problem with transportation, but not in bigger cities. If there is a negative genetics test result and you need an expert, there is no place to refer her in Latvia…I know that there work only two doctors who are overloaded – if you get an appointment you are lucky, but it is not normal to rely on luck." (Gynaecologist/Obstetrician, private sector)
6. "Antenatal, postnatal care in Riga and other bigger cities, concentration of maternal care providers is certainly larger than in rural regions." (Midwife, Public sector)
7. "I work in Rezekne, Jekabpils, Daugavpils and Preili – in the private and public sector, in outpatient and inpatient care." (Gynaecologist/Obstetrician, private & public sector)
8. "Latvia is a unique country where per 2 million inhabitants are 70 hospitals, simply not possible to afford things" (Anaesthesiologist & Reanimatologist, public sector)
Women
9. "To receive good quality ultrasound, you need to travel quite a distance and also to wait at least 2 months. Despite that, you need to face a long delay upon arrival."
10. "Gynaecologist has long waiting list and long delay"; "Good specialists always have a long waiting list"
"For USG check-ups you need to go to Riga, because in Ogre there are only private services. Person without a private transport can face some problems"
11. "In my municipality, there are no obstetricians/midwives who could provide services to a high-risk pregnancy"
12. "With respect to childbirth, it was bad luck with the main doctor and due to the low interest and poor attendance it resulted in C-section. Complete ignorance even though I was the only woman in labour."

All three respondent groups did not see waiting lists as a major problem in accessing adequate maternal care but agreed that they become a problem for necessary care during the maternal period outside obstetrics (e.g. for endocrinology). Healthcare professionals suggested that the waiting lists might be shorter at private providers and that in urgent specialised care (e.g. child genetics) there are only few professionals and timely access depended on luck. Some women identified delays in the schedule of maternal care providers of one to two hours (see Table 4.2, quotation 2-3, 5, 9-10).

Shortage of healthcare staff is, according to healthcare professionals and decision-makers, an important problem in Latvia, especially in rural areas and public inpatient care. A few women agreed that skilled maternal care providers in inpatient care were lacking, especially during night hours. Decision-makers noted that the human resource problem is increasing due to the emigration of highly trained or qualified professionals. They also explained that maternal care providers are switching from the public to the

private sector, as well as from rural to urban areas and from inpatient to outpatient care. The healthcare professionals pointed out that Latvia has too many hospitals (about 70 hospitals for fewer than 2 million inhabitants), but only 18 have childbirth departments. At the same time they argued for the need to concentrate the provision of maternal care to increase the availability of (human) resources and to maintain childbirth case volume standards of at least 700 per year. Two gynaecologists from East Latvia (which has plenty of rural areas) said that they work in multiple towns to increase the availability of their services in that region. Healthcare professionals and decision-makers agreed that the involvement of general practitioners would improve the availability of human resources (see Table 4.2, quotation 4, 7-8, 11-12).

Appropriateness

None of the healthcare professionals and decision-makers identified problems related to conditions in healthcare facilities. Most women-respondents were also satisfied with the facility conditions and the perceived skills of healthcare professionals. A few women indicated that some facilities needed renovation and suggested that some (publicly funded) gynaecologists and midwives lacked skills and knowledge in case of complications or high-risk pregnancies. Furthermore, eight out of 50 women stated that their personal connections helped them to receive better and faster maternal care. These women highly differed in their characteristics, i.e. education (high school - bachelor), household income (€251-€3000), health complications, type of childbirth and number of antenatal check-ups (3-25). Decision-makers claimed that the national Health Inspectorate reported inadequacies in childbirth services and gynaecology/ obstetrics outpatient care. They said that the improvement of the quality of childbirth services has been their priority (see Table 4.3, quotation 1, 12-15).

Decision-makers explained that antenatal care in the public and private sector is provided according to Regulation No 611, which sets out the minimum standard for antenatal and postnatal care. This includes a checklist of routine procedures for each visit. Furthermore, each facility has protocols for childbirth care. There are also various guidelines and tools developed in collaboration with WHO Europe and specifically adapted for Latvia, such as the maternal nutrition guidelines and the healthcare quality assessment tool. Healthcare professionals and decision-makers agreed that there is a need for better compliance with standards and protocols, and for making guidelines mandatory (see Table 4.3, quotation 4-5, 8, 11).

Another quality-related problem that emerged in the study is related to patient data. Healthcare professionals saw women in labour coming from other providers without appropriate patient files and health information, which created a potential threat to women's health. Problematic cases such as these were discussed in the meetings of the Association of Obstetricians and Gynaecologists to give providers a stimulus to improve

Table 4.3: Participant quotes about appropriateness of maternal care

Decision-makers

1. "The Health Inspectorate is the only institution in Latvia which receives and deals with patient complaints. Most complaints are about childbirth services, about gynaecologists that people are not satisfied with… Maternal death I cannot imagine being unregistered or misrepresented in Latvia, because there is an investigation of each case that takes place." (WHO Latvia)

2. "This is something that I totally do not support in the situation of Latvia that there are such paid contracts made between the doctor and woman and that might have an influence on quality." (WHO Europe)

3. "To deliver good quality, an institution should deliver a minimum of 700 births per year. There are many institutions that cannot reach the 700 births." (Management of Maternity House, public sector).

4. "Regulation No 611 is a standard, no doubt. Guidelines are not obligatory, they are a suggestion and a support in decision-making. We cannot judge in cases where guidelines have not been used – it is not mandatory at the moment…If we are looking at maternal death causes then actually there are many socio-economic causes. There were also a few maternal deaths with indirect maternal causes, such as flu, HIV and suicide." (Ministry of Health)

5. "Lacking are guidelines for different pathologies. We are adapting, but it is more depending on – the more I know myself, the more I will be able to adapt." (Management Gynaecology/Obstetrics clinic, private sector).

Healthcare providers

6. "Providers in the private sector are not going to be the worst. Quality differs based on how much each of us wants to know. Many are surviving on knowledge received 20 years ago and continue to work in this manner and we see that very well." (Gynaecologist/Obstetrician, public sector).

7. "Besides, women also have a feeling that they can buy quality. You can choose your doctor freely and if you are not satisfied with any quality aspects, you can change a provider." (General Practitioner, does not provide maternal care)

8. "Our re-certification is every five years and we have good association which offers seminars that are very interesting and we are also offered various guidelines, but they are not mandatory." (Gynaecologist/Obstetrician, public sector)

9. "Quality is also affected by the volume of patients and the fee per patient you receive." (Gynaecologist/Obstetrician, private sector)

10. "We are quite a small population and we also have few births in absolute numbers. Therefore, every single maternal death case makes the statistics look catastrophic." (General Practitioner, does not provide maternal care)

11. "Every guideline in nature is a recommendation. Also, the gynaecologist and obstetrician association is developing and updating them, but unfortunately it is not a normative act from the ministry, which would put the responsibility on me." (Midwife, public sector)

Women

12. "I was not satisfied with publicly funded gynaecologist's and midwife's attitude and skills. Might have been sufficient for a physiological pregnancy, but not in case of complications."

13. "During childbirth safety procedures were not ensured (my partner heard midwives speaking of some medical equipment). After childbirth child developed an infection due to inadequate care. Inpatient care facilities were outdated (Soviet time), depressive and not comfortable."

14. "I was not appreciated by the doctor. In those five days he ignored me, did not come to check-up during discharge, only in a rough manner took out the stiches and gave rude instruction to not get pregnant within two years."

15. "In Daugavpils hospital, they did not want to do a C-section even after 30h in pain, luckily mother in law had connections in Kraslava hospital. The director called them and asked to rescue us. Unfortunately, due to the long waiting, my daughter got some movement complications."

their care while not risking to lose their reputation. Decision-makers said that institutions with lower case volumes (less than 700 births per year), especially in rural areas, might also have problems with inexperienced staff, which might undermine quality of care (see Table 4.3, quotation 3). They suggested that institutions with low case volumes should in principle be closed.

Healthcare professionals and decision-makers agreed that the procedures related to the registration of pregnancies, childbirths and maternal deaths are very accurate. Decision-

makers described a few isolated cases of avoidable maternal deaths caused by absence of or inappropriate care, e.g. due to the absence of antenatal care and attendance during birth, insufficient capacity and resources, poor diagnostics, and logistic problems with urgent blood supply. Healthcare professionals and decision-makers also explained that Latvia has implemented a confidential inquiry program to investigate maternal deaths that identifies reasons behind maternal deaths and possible insufficiencies in care (see Table 4.3, quotation 4, 10).

Healthcare professionals and decision-makers noted that healthcare providers need recertification every five years and are obliged to follow training and various seminars to stay up to date. However, healthcare professionals indicated that not all maternal care providers are motivated to improve their skills, and some continue practicing based on the knowledge obtained 20 years ago. According to healthcare providers, this can also be seen in the private sector even though private providers rely on patient payments (in case they do not contract with the state). However, some healthcare professionals and decision-makers thought that women feel they can buy maternal care quality, i.e. rather pay than take the chances of receiving inappropriate care (see Table 4.3, quotation 2, 6-9). This notion was confirmed by women-respondents.

Affordability

Healthcare professionals and decision-makers indicated that salaries of maternal care providers in Latvia are low and, to improve their salaries, health professionals often switch from public inpatient care to private outpatient care. They also claimed that women receiving maternal care in the public sector have been exempted from (official) patient charges, although they still have to cover the cost of medications (to some extent) if needed and transportation (see Table 4.4, quotation, 1, 3-5, 7). Almost half of the women-respondents informed us that they paid OOP charges for maternal care (ca. € 200 in total on average), which for one woman amounted to € 1500. The rest of the women in this study paid nothing or only a minimal fee. Only two women claimed that the payment obligations resulted in an underutilisation of maternal care.

All three respondent groups explained that women who have their yearly check-ups with a private gynaecologist are more likely to remain with the same provider during their pregnancy, in which case they have to pay, unless the private provider has a contract for government funding. Women are free to opt for private care but healthcare providers indicated that the overall ability to pay in Latvia is rather low. According to one of the decision-makers, there is a demand for private providers because women are willing to invest in safe pregnancies and childbirths (see Table 4.4, quotation 7-9).

Decision-makers indicated that public maternal care providers or private providers with a public service contract receive a reimbursement of € 22 per antenatal visit. Although

Table 4.4: Participant quotes about affordability of maternal care

Decision-makers **1**. "I know that some obstetricians leave hospitals because they get paid less than what they have to pay their babysitter - that is they go to some outpatient clinic where they can earn more. I believe there is much less OOP and under-the-table payments. There is still that attitude that is being shown with bringing flowers for example." (WHO Europe) **2.** "Contracting obstetrician is 600 euros, midwife 450 euros, private room per night 60 euros. We need to sell these services to break even. In case of postnatal complications, we hospitalise mother and baby free of charge." (Management of Maternity House, public sector) **3.** "In our clinic, antenatal care visit is 35 euros, if you have contract with government – reimbursement is 22 euros. If a woman needs endocrinologist, they have a 6-month waiting list in the public system and if a woman does not want to pay privately she has a risk during childbirth and to her child. If woman has ability to pay she knows where she invests." (Management Gynaecology/Obstetrics clinic, private sector) **4.** "Additional charge for contracts with midwives and gynaecologist is really for the extra service I think – for smile, for communication, additional time and politeness." (WHO Latvia) **5.** "Woman is free from patient charges during pregnancy week 2-42 in public system. Home-birth is currently not reimbursed – these services are more expensive. Private gynaecologist can contract government program "money follows pregnant woman." (Ministry of Health)
Healthcare professionals **6.** 30 euro per antenatal care visit, additional tests about 100 euros in total…I think to some extent informal payments exist in public and private sector" (Gynaecologist/Obstetrician, private sector) **7.** "There is a governmental program that ensures free of charge maternal care since 2012. Not all gynaecologists participate in this program and women that have regularly been for yearly check-ups to a private doctor are most likely to stay with the same provider during the pregnancy." (General Practitioner, do not provide maternal care) **8.** "Visiting private provider for which you have to pay is a free choice of a woman." (Gynaecologist/ Obstetrician, public sector) **9.** "Latvia is a very stratified society. I read once that 2700 houses in Latvia do not even have electricity supply." (Anaesthesiologist & Reanimatologist, public sector) **10.** "I think informal payments are not required for better quality services, but more as a tradition of showing gratitude which has been there for decades." (Midwife, public sector)
Women **11**. "Paid informally for childbirth services, after the service provision, made fruit bowl and a card as a gratitude for helping with giving birth to the baby." **12.** "Epidural anaesthetics -220€, oculist - 4,27€, Rheumatologist (4 visits) ~100€, Blood test ~ 20€, Glycose test - 4€, Ultrasound pictures - 25€, cost of transportation ~50€."

this amount had increased almost four-fold in recent years, it is still lower than the one asked for in the private sector, which is why some private providers still resist contracting with the public sector. In addition to antenatal visits, women in the private sector pay for all tests and ultrasound examinations. Prices vary per provider and are based on services utilised, but one vaginal childbirth, as indicated by providers, could cost around € 500-1000. Decision-makers explained that, to break even, public inpatient service providers have to sell extra services such as private/family rooms (€ 60 per night). Women may also contract either an obstetrician (€ 600) or a midwife (€ 450), so that these are present during birth. Women confirmed purchasing such services. Additionally, women-respondents said that they paid for anaesthetics during birth, additional tests outside the scope of maternal care, medications and travel costs (see Table 4.4, quotation 2-3, 6, 12).

Healthcare professionals and decision-makers agreed that overall and even informal OOP payments in maternal care have decreased even more due to the latest (2012) State Maternal Care Program "Money follows pregnant women". However, there is still

Table 4.5: Participant quotes about approachability of providers & acceptability of maternal care

Decision-makers
1. "There are myths with incorrect information that you are struggling with and the healthcare professional in his 20 minutes does what he can do. Grūtniecība.lv is a governmental website containing good information about pregnancy." (WHO Latvia)
2. "I can say that the attitude is and has always been an issue. It has improved tremendously, that is no doubt." (WHO Europe)
3. "The poor attitude or communication does not affect health directly but psychological and emotional influence there is." (Management of Maternity House, public sector)
4. "We were fighting multiple times with the Ministry of Education to re-introduce health education in schools. Example: baby is crying in nights, not gaining weight and mother is breastfeeding. Who could even imagine that the first milk, which is the most nutritious and important she pumps and throws out and then continues breastfeeding with the watery milk." (Ministry of Health)
5. "Of course, there are women who are socially and economically deprived and not educated – then they are not utilising antenatal care and these are the unplanned and acute cases." (WHO Latvia)
6. "Women have access to good informative websites, magazines evidence-based, WHO has been involved. We speak here about an average, women within the society, but there are women without smartphone without any interest to read whatsoever." (WHO Europe)
Healthcare professionals
7. "I do not think it is the problem number one, but it still an important problem. Provider needs to be interested in what he is doing, it is not really dependent whether it is private or public provider – we see this problem in both sectors." (Gynaecologist/Obstetrician, private sector)
8. "From all women I see, maybe 20% are physiological pregnancies, the rest are with complications and visits take longer time, I spend at least 30 minutes while government standards are 20 minutes." (Gynaecologist/Obstetrician, Public sector)
9. "If simultaneously it is necessary to fulfil functions of social worker or phycologist – in general it is not our competency, but how much time do I need to address to (let's take the easiest example – smoking)." (Midwife, public sector)
10. "Most problematic cases are related to education level and socio-economic status - there are such women who come for childbirth drunk and the next day do not understand it is her child." (Gynaecologist/ Obstetrician, public sector)
11. "Often, we face no interest about herself, her body and her health (to mention the smoking again)." (Midwife, public sector)
Women
12. "Attitude was good, gynaecologist listened to me, gave advice. When I gave birth, specialists were supportive and encouraging."
13. "After C-section, nurses were very impolite, even midwives were strict, careless and did not communicate."
14. "Very good attitude from all providers, despite one incident when in one morning in I went to Stradins hospital where the doctor was very rude and in a bad mood. I was surprised that it is a young doctor in residency who already hates night shifts."
15. "Not that I did not receive services, but according to me I received inadequate comments from General Practitioner who told me 'do you really need that many children', also judging my family status (we were not married).
16. "In period when a woman is expecting a child, it is important to feel safe about her and her child's health, to feel taken care of."
17. "Important to know that with me and my unborn child everything is ok. Was important that my baby is born healthy. There were no services that were unnecessary."
18. "During pregnancy, all information I received from my gynaecologist, but what I did not understand found in online forums where mums are sharing their experience. In post-natal period, big support received from friends who have recently given birth."

gratitude being shown by patients to staff by giving small gifts in kind, especially after childbirth. Most women noted that they did not provide any informal payments but a few women reported giving small gifts in kind as a token of appreciation for friendly attitudes and good services (see Table 4.4, quotation 1, 6-7, 10-11).

Approachability

Healthcare professionals and decision-makers claimed that the attitudes and communication skills of maternal care providers are an important problem in Latvia, although they had improved tremendously in recent years, partly due to better financial incentives and more rights to patients. Decision-makers added that women are free to choose their provider and are encouraged to request appropriate attitudes, communication and information. However, all respondent groups also opined that attitudes and communication still have much room for improvement, since they might affect women psychologically and emotionally (see Table 4.5, quotations 2-3, 7, 12-15).

These two groups of respondents also noted that poor attitudes and communication might be related to the overall motivation and attitudes of healthcare professionals towards their work and not only to their rates of reimbursement. However, they also pointed out that providers' socio-economic situation and long working hours across multiple jobs are bound to affect attitudes and communication. In this area, there are no strict guidelines or controls, but, as noted above, women are free to change their maternal care provider when they are not satisfied with them (see Table 4.5, quotation 1, 8).

Decision-makers indicated that, perhaps in order to avoid the possible risk of experiencing poor attitudes and communication during childbirth, women sign contracts with obstetricians and midwives. In this way, their impression is that women feel that they have done a great deal to ensure support in case of any emergencies or complications. The general expectation is that attitudes, communication and attention are better in the private sector, but one decision-maker pointed out that, due to the overall economic situation in Latvia, most women will continue utilising public maternal care services (see Table 4.5, quotation 3).

With respect to the provision of information, healthcare professionals claimed that it is difficult to provide sufficient information to women in the 20 minutes allocated per visit, especially if it is a high-risk pregnancy. They explained that sometimes there are social and psychological problems to discuss, such as smoking and alcohol consumption, which are not their areas of expertise, but are still important for the pregnancy. Decision-makers indicated that there is an interactive online source of information ["grutnieciba.lv"] provided by the government and maternal care providers, which provides women with essential information about pregnancy. However, there is also plenty of misleading

information in the general media and the women's social networks (see Table 4.5, quotation 1, 8-9).

Most women were overall satisfied with the attitudes, communication and information from healthcare providers during their maternal period. Only a few women reported negative experiences in this respect with maternal care providers in inpatient and outpatient care. In contrast, none of the women who reported utilising maternal care in the private sector mentioned negative experiences with the providers' attitudes or communication (see Table 4.5, quotation 12-15).

Acceptability

Healthcare providers noted that maternal care providers often get the blame for women's health outcomes, despite the fact that women are also responsible. They pointed out that some women are lacking (health) literacy and awareness about the need for maternal care, and some women have reportedly little to no interest in their bodies and health during the maternal period. Healthcare providers also noted problems such as smoking, illicit drugs and alcohol use. A manager of a private maternal clinic shared that, since they started contracting for public funding, they provide services to women from various socio-economic groups, including those with lifestyle-related problems. Healthcare providers also claimed that there are women who arrive for childbirth drunk and unaware of the situation, or women who refuse to receive antenatal care. They also noted that there are women who refuse ultrasound examinations, thinking it will harm their babies (see Table 4.5, quotation 4-6, 10-11).

Healthcare professionals and decision-makers noted that there is much information available for women in the maternal period (e.g. on websites or in magazines) if they are interested in reading it. They found that the overall situation has improved because young women read online sources and communicate with peers about their experience during pregnancy. However, they must also be able to filter which information is adequate. Healthcare professionals pointed to the need for improving women's (health) literacy and overall socio-economic status (see Table 4.5, quotation 4-6, 10).

All women-respondents except one claimed that all maternal care services were important, not only for their and their baby's physical health, but also for psychological and emotional support. Women said they received a lot of information from their maternal care providers and this helped them during their maternal period. Overall, women gained the necessary information from a mix of sources, including the internet, books, courses, healthcare providers and peers from their social network. None of the women mentioned any other barriers related to culture, family traditions, religion or gender relationships, which hindered them from utilising any of the maternal care services (see Table 4.5, quotation 16-18).

4.4. DISCUSSION

As indicated by our results, women in Latvia find it important to receive adequate maternal care which includes appropriate provider attitudes and clinical quality. Assuring such care can be challenging even for well-off and better-informed women, but even more so for less informed women and women who cannot afford care in the private sector and whose choice is limited to publicly funded services. Geographical distance can also be problematic to some extent in rural population groups and high-risk pregnancies, due to the urbanisation of care and the related time and traveling costs involved.

In line with what has been described in the literature,[37,105] the stakeholders in our study confirmed that affordability of maternal care is generally not a problem in Latvia. Affordability might become problematic when a woman during her maternal period requires care outside the maternal care sector.[100] Nevertheless, there are clear inequities in being able to afford (maternal) care in the privately financed sector. All three stakeholder groups perceive maternal care in the private sector to be of good quality. Currently, about 70-85% of antenatal care is by private providers, although women do not have to pay if these providers have contracts for public funding.

The participants in our study also noted social problems, as also identified by some other studies,[100,109] such as little interest in one's own health and poor health literacy (e.g. not using antenatal care or not treating existing infectious diseases), combined with lifestyle-related problems, as factors in not seeking maternal care. This underutilisation is also related to the absence of sexual health education in schools and poor family planning.[35,109] All women in our study indicated the importance of maternal care services, but this may reflect selection bias, as they were members of on-line discussion groups, and thus might be more interested and eager to be informed than other women in Latvia. Overall, our findings suggest that many sources are being used to gain information during the maternal period. It is however important to stimulate the use of adequate sources such as the government online resource "grutnieciba.lv", which aims to provide women with trustworthy information.[107]

In terms of human resources, the stakeholders mentioned an increasing shortage of maternal care providers, especially in rural areas and public inpatient care facilities. In order to improve the availability of human resources, participants pointed to the need for greater involvement of midwives and general practitioners in the provision of maternal care. According to the literature, the lack of human resources in healthcare is the result of the emigration of highly trained and qualified professionals and urbanisation trends.[100,102] With the high quality of medical education and low wages, Latvia is witnessing a brain drain and has become a sender country of healthcare workers, resulting in a serious deficit in gynaecology. The total number of healthcare workers decreased by 14% (nurses -19%, mid-

level specialists e.g. midwives -16%) in the period from 2009 to 2014, while the population of Latvia decreased by about 8%. In addition, there is a concentration of healthcare workers in the capital city of Riga (about 60% of doctors). To improve service availability, since 2015 state-funded residency places are given priority if there is an agreement to start employment at a medical institution outside Riga. In return, after completing the residency, medical doctors are required to work for 3 years in a state or municipal medical institution.[114,115]

The literature points to concerns over the appropriateness of maternal care (in particular inpatient care), including an insufficient use of medical guidelines.[100] The results of our study suggest that not all providers were aware of the existence of certain medical guidelines, such as bleeding in the postpartum period, which are available on the website of the Obstetrics Association.[116] This may indicate inability or reluctance to use existing resources.[56] The highest volume of complaints that the national Health Inspectorate receives relates to inpatient care for childbirths. Our study suggests that clinical quality, professional skills and attitudes towards women differ among providers. While minimum quality standards in maternal care are regulated by law, many women carefully consider where to use maternal care and some even sign (paid) contracts with maternal care providers to avoid poor attitudes and low clinical quality.[105] Although maternal care providers have to undergo re-certification every five years, our study suggests that certain providers practice outdated knowledge and principles. Decision-makers and women showed consensus that the low salaries in the public (inpatient) care system may also undermine the motivation of maternal care providers to provide appropriate services, which might be one of the reasons why women believe that maternal care in the private sector is better. News articles report that gynaecologists/obstetricians working in inpatient care received about €5.20 per hour, while midwives received only €3.15 per hour before taxes. Since 2018, their salaries have increased to €10 per hour to gynaecologists/obstetricians and €5 per hour to midwives.[104,117,118]

Although this study focuses on Latvia, it is relevant for data collection in other countries. Our results show the importance of micro-level indicators, such as the use of clinical guidelines, provider knowledge, provision of care, communication and attitudes, and health literacy. In addition to already existing macro-level indicators, these micro-level indicators should be taken into account for a comprehensive evaluation of the provision of maternal care. The study results are also relevant for countries with similar contextual factors, such as many countries in Eastern Europe where maternal care problems might remain concealed by comparatively good macro-level indicators. Access-related problems similar to the ones found in our study have been reported in Serbia, Russia, Ukraine, Bulgaria, Georgia and Albania, including geographical barriers, a shortage of skilled staff, inadequate attitudes of health professionals, and poor quality of care.[53,113] In all countries, it is important to consider factors that influence women in utilising maternal care, including perceived quality of care and attitudes of health professionals.

Strengths and limitations

The mixed-methods research design allowed us to capture a detailed picture of this under-researched topic, but makes it difficult to generalise findings. To mitigate researcher bias, a group of experienced researchers was involved in the development of the online questionnaire and the interview guide; we also checked the face validity of both research instruments. The recall bias was avoided to a certain degree by including only women who gave birth in the past 4 years, as well as stakeholders who were directly involved in maternal care decision-making or provision. Our study only included women who were members of Facebook "mommy" groups, which, as discussed above, might give rise to selection bias. Moreover, since this study has a qualitative nature and design, it might be that not all groups of women are well represented. Finally, an important advantage of our study was the possibility to triangulate the opinions of the three stakeholder groups, which allowed for validation.

4.5. CONCLUSIONS

This study explored stakeholder views on access to adequate maternal care in Latvia, distinguishing five access domains: availability, appropriateness, affordability, acceptability and approachability. It identified access barriers related to a shortage of human resources, insufficiencies in maternal care quality standards, health literacy in women (knowledge of behaviour during maternal period and the importance of maternal care services) and inequalities across population groups. There are also problems with the application of clinical guidelines and inequalities in providers' knowledge and the care provided, especially in emergency situations. Addressing these factors could help to improve access to adequate maternal care.

5

Barriers to accessing adequate maternal care in Romania, Bulgaria and Moldova: a cross-country comparison

The chapter draws upon:

Miteniece, E., Pavlova, M., Rechel, B., Belichovska, M., Zuza, I., Radu, I., Groot, W. Barriers to accessing adequate maternal care in Romania, Bulgaria and Moldova: a cross-country comparison. *Submitted for publication.*

ABSTRACT

Introduction

Eastern European health system indicators (number of health workers and care coverage) suggest well-resourced maternal care systems, but maternal health outcomes compare poorly with those in Western Europe. Often, poor maternal health outcomes are linked to inequities in accessing adequate maternal care. This study investigates access-related barriers (availability, appropriateness, affordability, approachability and acceptability) to maternal care in Romania, Bulgaria and Moldova.

Methods

This cross-country study (N=7345) is based on an online survey where women who received maternal care and gave birth in 2015-2018 in Bulgaria (N=4951), Romania (N=2018) and Moldova (N=376) provided information on their experiences with the maternal care received. Regression analysis is used to identify factors associated with accessing maternal care across the three countries.

Results

Results show high rates of C-sections and a low number of antenatal and postnatal care visits, which indicates problems in the provision of appropriate care. Informal payments and use of personal connections are common practices. Formal and informal OOP payments create a financial burden to women with health complications. Women who have health complications, women who have a C-section and those who give birth in a public facility and have fewer antenatal check-ups are more likely to face access-related barriers.

Conclusions

This study identifies various barriers to accessing adequate maternal care in Romania, Bulgaria and Moldova. More attention needs to be paid to the appropriateness of care provided to women with complicated pregnancies, who have a C-section, give birth in a public facility and those who receive less antenatal care.

5.1. INTRODUCTION

Previous Chapters in this dissertation have shown that Europe is a minor contributor to the global maternal mortality burden, but also that the problem is still more common in Eastern than in Western Europe. MMR point estimates in Europe in 2017 ranged from 2 per 100,000 live births in Italy , Poland and Norway to 60 per 100,000 live births in Kyrgyzstan [5]. Despite macro-indicators that suggest well-designed maternal care systems,[53] Romania and Moldova have a much higher estimated MMR (19 deaths per 100,000 live births in 2017) than Bulgaria (10 deaths per 100,000 live births in 2017).[5] Previous Chapters also emphasised that receiving adequate maternal care is key in reducing maternal mortality and that the actual allocation of financial and human resources, the appropriateness of care and access to it are problematic in Eastern Europe.[5,53,119] The UK Care Quality Commission maternity care survey and the state-based surveys in Australia, Victoria, focus on women's experience with antenatal, birth and postnatal care.[120,121] However, no such national surveys exist in Eastern European countries like Bulgaria, Moldova or Romania.

In Bulgaria and Romania, unmet needs for medical care due to financial reasons suggest access-related problems across all income quintiles.[108] Patients in Bulgaria face exceptionally high OOP payments, amounting for 48% of total health expenditure in 2015.[108] In Romania, OOP payments are also widespread.[108,122] Romania and Bulgaria also have some of the lowest numbers of nurses per capita in the EU, while Romania also has a very low number of physicians.[108,119] Travel distance, outdated infrastructure, gaps in population coverage, challenging access to pharmaceuticals and fragmented availability of medical staff in Bulgaria and Romania result in unequal access to medical services, especially for low-income groups.[108,119] These shortcomings are associated with poor health outcomes, especially among pregnant women.[108] Moldova's health system is facing similar challenges. Insufficient medical personnel in most rural areas as a result of brain drain and insufficient ultrasound equipment reduce access to maternal care.[45,123] According to a previous study, 61.6% of all patients in Moldova make informal payments voluntarily and 23.2% are requested to pay informally by medical staff, illustrating that informal payments remain a widespread problem.[123,124]

Following the study results presented in Chapters 3 and 4, this study examined barriers to access to adequate maternal care in Romania, Bulgaria and Moldova. These countries were chosen for their broadly similar background (as Romania and Bulgaria are part of the EU and Romania and Moldova have strong cultural similarities), level of economic development, deficiencies in funding and organisation in maternal healthcare, but differing MMR estimates. As the previous Chapters 2-4, also this Chapter follows the framework of Levesque et al. illustrated in Chapter 1, Figure 1.1. This study employs all five indicators of access to adequate maternal care explained in Chapter 1: availability,

appropriateness, affordability, approachability and acceptability [15]. The purpose of this study was to identify and compare barriers to accessing adequate maternal care in Romania, Bulgaria and Moldova and to explore the association between access-related indicators and various demographic characteristics and health status.

5.2. METHODS

Similar to the methodological approach of described in Chapter 4, we used data collected during a two-week period in March 2018 through an online survey among women in Romania, Bulgaria and Moldova who were members of so-called 'mommy' groups on Facebook.

In order to find 'mommy' groups on Facebook, keywords such as 'mothers' (mame/мама), 'mommies' (mămici/майки), and 'babies' (bebeluși/бебета) were used. For an advanced search, these keywords were used both in English and in Romanian/Bulgarian. Furthermore, these terms were searched by country, city and region in order to achieve a better geographical representation and cover as many regions of the three countries as possible.

Similarly as in Chapter 4, eligible respondents were those who had given birth in these three countries in the preceding four years and had received maternal care. A recall period of four years was considered to be appropriate because the literature suggests that women can well recall the childbirth experience even 5 years after the birth [125]. Before enrolling the survey and at the beginning of the survey, it was emphasized to participants that they were asked to provide information on the experience during the last pregnancy, birth and postnatal period. The invitation to the survey, along with a link to the online questionnaire, was shared in Facebook 'mommy' groups by Romanian, Bulgarian and Moldovan data collectors who had asked the permission of the groups in their country to become a group member. The respondents were enrolled through self-administration. Given the timeline of messages in social media, one reminder to participate was sent to each Facebook 'mommy' group after one week of the survey being active. At the end of the second week, the survey was automatically deactivated. We could not repeatedly send reminders because this would have overburdened Facebook 'mommy' groups.

This type of online data collection has been recognised as a time- and cost-efficient way to facilitate the inclusion of a large number of potential participants. It also provides the participants with a high level of anonymity, as they take part in the survey without a personal invitation.[126,127]

The online questionnaire consisted of closed questions which cover the general demographic characteristics of the respondents, information on their maternal health condition and their experience with maternal care during the last childbirth related to the five groups of access indicators according to the framework of Levesque et al. (see Appendix D1).[15] The questionnaire was developed in English and validated in the study described in Chapter 4. To enable the participants to fully understand the questions and decrease a potential information bias,[128] the questionnaire was translated into Bulgarian and Romanian by the data collectors who were bilingual (English and Bulgarian/ Romanian).

Survey question categories with only a limited number of observations were merged in order to create sufficient power to identify effect sizes in the analysis (see Appendix D2-D5). Descriptive statistics were calculated for all dependent variables (access-related indicators) and independent explanatory variables (socio-demographic and health characteristics) for the three countries. Independent variables have no missing values, while for the dependent variables missing values are reported in the results section. Binary logistic regression analysis was carried out for access to adequate maternal care to test which dependent variables are associated with the general sample characteristics.[127] Dependent variables are related to four out of five access-related indicators: availability, appropriateness, affordability and approachability of care. Variables related to the fifth access-related indicator, acceptability, showed virtually no variation and were therefore excluded from the regression analysis. The explanatory variables included were: age, education, number of children, civil status, income, presence of health complications, utilisation of public or private sector, as well as time, place and type of the last childbirth (see Appendix D2-D5). In particular, the number of children was included to check if prior experience with maternal care influenced the women's answers.

5.3. RESULTS

The results are based on 7345 responses by women who participated in Facebook 'mommy' groups in Romania (n=2018), Bulgaria (n=4951) and Moldova (n=376) and gave birth in 2014-2017. Responses from those who did not confirm agreement to participate in the study were excluded (60 responses from Bulgaria, 31 from Romania and 3 from Moldova). Furthermore, responses that included missing values in any of the 12 questions on general characteristics were excluded from the final sample. In total, these were 155 cases (Romania n=37, Bulgaria n=109, Moldova n=9), representing 1-2% of responses per country.

General characteristics of the sample, maternal health and use of maternal care in Romania, Bulgaria and Moldova.

Table 5.1 presents the main characteristics of respondents in the three countries. Spearman's correlation coefficients suggest no strong correlation between these variables (correlation was between -0.4 and 0.4). Across the three countries, women were similarly distributed among the defined age groups, with the majority (40.8%-49.5%) being 25-29 years old. The women varied in their education level, but most (71.3%-97.3%) had acquired a higher level of education (college and higher). The majority (57.2%-65.4%) had one child, while very few (3.2%-8.5%) had three or more children. In Romania and Bulgaria, the majority of women (40.6% and 45.7%) had an income in the €501 - €1000 category, while in Moldova the majority (43.4%) had an income in the range of €251 - €500. Finally, 96.7-97.2% of women in the three countries lived together with a spouse or partner.

Table 5.1 also presents data on the characteristics of respondents' maternal care use and health status during the maternal period. Most women in all three countries (77.2% - 80.5%) had the last childbirth within the two previous years. For most (67.3%-83.8%), the last childbirth took place in a public institution. In Bulgaria, women more often gave birth in private institutions (32.1%) than in Romania (14.6%) or Moldova (16%). In the three countries, 26.6%-34.8% of women experienced health complications during their last maternal period. C-section was reported at an extremely high rate in Romania (61%) and Bulgaria (53%), while in Moldova the rate was markedly lower (19.9%). The data also show a variation in antenatal visits across the countries. In Moldova, 61.5% of women had fewer than 7 antenatal visits, while in Romania this percentage stood at 32.5% and in Bulgaria at 16.4%. Finally, 13.4-18.7% of women in the three countries reported not to have received any postnatal care.

Indicators related to access to adequate maternal care in Romania, Bulgaria and Moldova.

With respect to availability, women in Moldova seem to experience the most barriers compared to Bulgaria and Romania. Women from all countries (33.4-57.2%) and especially from Moldova (57.2%) found the shortage of staff to be the most prevalent problem of care availability. In addition, 19.6-51.9% of women experienced barriers related to waiting lists, referrals and facility opening hours, with the highest rates in Moldova. Unavailability of adequate maternal care due to time, transportation and distance was slightly less prevalent, but still a meaningful barrier to 15.1-25.3% of the women in the three countries (see Table 5.2).

In terms of appropriateness of maternal care, women assessed how satisfied they were with provider skills during the maternal period, as well as with the conditions of and equipment in maternal care facilities. With respect to provider skills, it seems that women

Table 5.1: General characteristics of the sample, maternal health and the use of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376)

	Romania n(%)	Bulgaria n(%)	Moldova n(%)
General sample characteristics			
Age at last childbirth:			
24 years or younger	440(21.8)	854(17.2)	71(18.9)
25-29 years	908(45.0)	2020(40.8)	186(49.5)
30-34 years	502(24.9)	1427(28.8)	100(26.6)
35 years or older	168(8.3)	650(13.1)	19(5.1)
Education level:			
Lower than High school	47(2.3)	25(0.5)	9(2.4)
High school	531(26.3)	1067(21.6)	5(1.3)
Some college or Bachelor's degree	917(45.4)	1734(35.0)	206(55.8)
Master's degree or higher	523(25.9)	2125(42.9)	156(41.5)
Civil status (values 0-1):			
Living with spouse/partner	1951(96.7)	4811(97.2)	364(96.8)
Living alone	67(3.3)	140(2.8)	12(3.2)
Total net monthly household income:			
€00 - €250	123(6.1)	333(6.7)	77(20.5)
€251 - €500	482(23.9)	1271(25.7)	163(43.4)
€501 - €1000	819(40.6)	2265(45.7)	82(21.8)
€1001 - €1500	397(19.7)	595(12.0)	42(11.2)
More than €1500	197(9.8)	487(9.8)	12(3.2)
Number of children:			
1 child	1320(65.4)	3180(64.2)	215(57.2)
2 children	633(31.4)	1590(32.1)	129(34.3)
3 or more children	65(3.2)	181(3.7)	32(8.5)
Characteristics of maternal care use and health status			
Time of last childbirth (values 1-5)			
< 1 year ago	718(35.6)	1477(29.8)	122(32.4)
1 year ago	387(19.2)	1181(23.9)	88(23.4)
2 years ago	470(23.3)	1162(23.5)	93(24.7)
3 years ago	260(12.9)	699(14.1)	47(12.5)
4 years ago	183(9.1)	432(8.7)	26(6.9)
Health complications in maternal period:			
No	1378(68.3)	3636(73.4)	245(65.2)
Yes	640(31.7)	1315(26.6)	131(34.8)
Place of last childbirth:			
Public facility	1692(83.8)	3332(67.3)	315(83.8)
Private facility or another	326(16.2)	1619(32.7)	61(16.2)
Type of birth:			
Vaginal childbirth	788(39.0)	2329(47.0)	301(80.1)
C-section	1230(61.0)	2622(53.0)	75(19.9)
Number of antenatal visits:			
0	144(7.1)	29(0.6)	10(2.7)
1-4	261(12.9)	407(8.2)	117(31.1)
5-6	253(12.5)	377(7.6)	104(27.7)
7-8	354(17.5)	668(13.5)	63(16.8)
9-10	401(19.9)	1055(21.3)	31(8.2)
11-12	179(8.9)	736(14.9)	14(3.7)
> 12	426(21.1)	1679(33.9)	37(9.8)
Number of postnatal visits:			
0	270(13.4)	924(18.7)	63(16.8)
1	475(23.5)	1996(40.3)	123(32.7)
2	383(19.0)	1190(24.0)	72(19.1)
3	167(8.3)	355(7.2)	31(8.2)
4	122(6.0)	144(2.9)	24(6.4)
>4	601(29.8)	342(6.9)	63(16.8)
Sector of maternal care reception:			
Public & private	688(34.1)	2043(41.3)	70(18.6)
Private	422(20.9)	1230(24.8)	36(9.6)
Public	908(45.0)	1678(33.9)	270(71.8)

in the three countries were most satisfied with care during childbirth (86.5-88.9%), and least satisfied with care during the postnatal period (58.8-74.7%). While during childbirth, women in the three countries were almost equally satisfied with provider skills, during the postnatal period, women in Bulgaria showed a much lower satisfaction rate (58.8%) compared to Romania (74.7%). The lowest satisfaction with provider skills during antenatal care was among women in Moldova (74.5%) compared to 86.5-87.9% in Romania and Bulgaria (see Table 5.2).

Affordability of maternal care varied highly across the three countries. The data show a high overall prevalence of informal payments (45.7-80.1%) and use of personal connections (34.3-63.8%) when utilizing maternal care. Even though informal payments and using personal connections are most prevalent in Moldova, they are also high in Bulgaria and Romania. 66.2%-78.6% of women from the three countries paid OOP for maternal care services. The highest financial burden was reported by women in Romania (43%) compared to Bulgaria (35.5%) and Moldova (22.2%) (see Table 5.2).

Regarding approachability, women seem to be least satisfied with the communication and attitude of health workers during the postnatal period (52.9-77.4%) and most satisfied during childbirth (76.7-87.3%). Results from all three countries show that women were least satisfied with the provision of information from their maternal care providers during the postnatal period (55.8-67.6%) (see Table 5.2).

In terms of acceptability, almost all women found it important to receive maternal care services in all maternal phases (91.6-99.7%). Nevertheless, the care acceptance rate, especially during the antenatal and postnatal period, was somewhat lower in Romania and Moldova compared to Bulgaria (see Table 5.2).

Regression analysis

Health complications during the maternal period and fewer antenatal care visits are significantly associated with barriers in the availability of adequate care in all three countries (i.e. shortage of human resources, geographical distance, time, waiting lists, transportation and facility opening hours). Similarly, with regards to appropriateness, having health complications during the maternal period and fewer antenatal care visits, but also giving birth in a public facility, are significantly associated with lower user satisfaction with provider skills and maternal care facilities (see Table 5.3 for illustration and Appendix D1-D4 for more details).

Table 5.2: Availability, appropriateness, affordability, approachability and acceptability of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376), descriptive results

	Romania ***N=2018*** **n(%)**	**Bulgaria** ***N=4951*** **n(%)**	**Moldova** ***N=376*** **n(%)**
Availability			
Experienced access barriers due to time, transport, distance (missing RO n=1, BG n=7, MD n=0)	304(15.1)	769(15.6)	95(25.3)
Experienced access barriers due to waiting lists, referrals or opening hours (missing RO n=6, BG n=7, MD n=0)	474(23.6)	969(19.6)	195(51.9)
Shortage of staff providing adequate maternal care (missing RO n=7, BG n=28, MD n=0)	791(39.3)	1646(33.4)	215(57.2)
Appropriateness			
Satisfied with maternal care provider skills (antenatal period) (missing RO n=0, BG n=7, MD n=0,)	1773(87.9)	4277(86.5)	280(74.5)
Satisfied with maternal care provider skills (childbirth) (missing RO n=1, BG n=23, MD n=0,)	1744(86.5)	4383 (88.9)	330(87.7)
Satisfied with maternal care provider skills (postnatal period) (missing RO n=6, BG n=42, MD n=1,)	1503(74.7)	2888(58.8)	235(62.7)
Satisfied with conditions and equipment at maternal care facilities (missing RO n=10, BG n=8, MD n=0,)	1370(68.2)	2932(59.3)	191(50.8)
Affordability			
Paid OOP (missing RO n=11, BG n=23, MD n=5,)	1329(66.2)	3875(78.6)	279(75.2)
Experienced financial burden (missing RO n=151, BG n=217, MD n=7)	802 (43.0)	1680(35.5)	82(22.2)
Provided informal payment (missing RO n=70, BG n=114, MD n=5,)	1229(63.1)	2202(45.7)	297(80.1)
Used personal connections (missing RO n=2, BG n=5, MD n=0,)	692(34.3)	1898(38.4)	240(63.8)
Approachability			
Satisfied with provider attitude and communication (antenatal period) (missing RO n=15, BG n=41, MD n=6,)	1710(85.4)	3728(76.0)	251(67.8)
Satisfied with provider attitude and communication (childbirth) (missing RO n=17, BG n=353, MD n=4,)	1747(87.3)	3524 (76.7)	312(83.9)
Satisfied with provider attitude and communication (postnatal period) (missing RO n=20, BG n=401, MD n=5,)	1547(77.4)	2405(52.9)	220(59.3)
Providers informed sufficiently (antenatal period) (missing RO n=24, BG n=54, MD n=4,)	1594(79.9)	3883(79.3)	251(67.5)
Providers informed sufficiently (childbirth) (missing RO n=24, BG n=90, MD n=4,)	1539(77.2)	3726(76.7)	280(75.3)
Providers informed sufficiently (postnatal period) (missing RO n=31, BG n=106, MD n=5,)	1344(67.6)	2704(55.8)	218(58.8)
Acceptability			
Important to receive maternal care services (antenatal period) (missing RO n=19, BG n=47, MD n=5,)	1841(92.1)	4885(99.6)	347(93.5)
Important to receive maternal care services (childbirth) (missing RO n=20, BG n=65, MD n=8,)	1946(97.4)	4872(99.7)	365(99.2)
Important to receive maternal care services (postnatal period) (missing RO n=32, BG n=66, MD n=7,)	1821(91.6)	4858(99.3)	357(96.2)

Table 5.3: Availability and appropriateness of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376) Logistic regression

	Availability			Appropriateness		
	Experienced access barriers due to time, transport, distance			Satisfied with maternal care provider skills (childbirth)		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95%CI)	Moldova aOR(95%CI)	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]
Health complications in maternal period	1.852(1.423-2.412)	1.744(1.473-2.064)	1.389(.838-2.303)	.473(.358-.626)	.484(.398-.588	.359(.186-.691)
Giving birth in private facility	1.844(1.074-3.165)	1.274(1.038-1.563)	1.042(.458-2.371)	3.164(1.585-6.314	1.808(1.374-2.378)	1.432(.391-5.250)
Giving caesarean birth	.888(.681-1.157)	1.138(.968-1.339)	.651(.326-1.297)	1.581(1.200-2.084)	1.741(1.439-2.106)	.807(.349-1.868)
Number of antenatal visits	.919(.857-.985)	.937(.893-.983)	1.006(.863-1.174)	1.218(1.130-1.312)	1.114(1.054-1.178)	1.123(.904-1.395)
Number of postnatal visits	.940(.878-1.007)	.905(.849-.964)	.961(.828-1.114)	1.046(.973-1.123)	1.124(1.043-1.212)	1.077(.882-1.314)
Public and private sector of care reception	1.029(.769-1.378)	1.404(1.150-1.716)	-	.892(.662-1.202)	.980(.795-1.208)	-
Private sector of care reception	.823(.494-1.371)	1.413(1.089-1.833)	-	.778(.474-1.279)	1.088(.795-1.489)	-
Sector of care reception in Moldova	-	-	1.340(.701-2.561)	-	-	1.824(.668-4.983)
Nagelkerke R square	.058	0.042	.081	.115	.072	.106
Model significance	p=.000	p=.000	p=.046	p=.000	p=.000	p=.043

	Affordability			Approachability		
	Experienced financial burden			Satisfied with provider attitude and communication (childbirth)		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95%CI)	Moldova aOR(95%CI)	Romania aOR(95% CI)[a]	Bulgaria aOR(95%CI)	Moldova aOR(95%CI)
Health complications in maternal period	1.668(1.352-2.057)	1.826(1.588-2.099)	1.168(.663-2.057)	.496(.374-.659)	.634(.542-.742)	.696(.383-1.265)
Giving birth in private facility	1.274(.834-1.948)	1.298(1.100-1.532)	1.345(.520-3.479)	1.517(.811-2.837)	1.767(1.444-2.162)	3.343(.881-12.689)
Giving caesarean birth	1.254(1.021-1.539)	1.365(1.199-1.553)	1.136(.558-2.312)	1.493(1.125-1.982)	1.226(1.060-1.417)	.892(.407-1.953)
Number of antenatal visits	.956(.906-1.0089)	.998(.960-1.039)	.894(.751-1.065)	1.182(1.096-1.274)	1.089(1.042-1.138)	1.113(.916-1.353)
Number of postnatal visits	1.005(.954-1.059)	.962(.916-1.010)	.905(.766-1.068)	1.012(.940-1.088)	1.173(1.108-1.243)	1.026(.864-1.219)
Public and private sector of care reception	1.085(.869-1.356)	1.588(1.357-1.859)	-	1.050(.771-1.430)	.944(.801-1.112)	-
Private sector of care reception	1.331(.904-1.961)	1.593(1.294-1.961)	-	1.013(.600-1.710)	1.293(1.012-1.652)	-
Sector of care reception in Moldova	-	-	.968(.459-2.041)	-	-	1.031(.467-2.279)
Nagelkerke R square	.109	.116	.188	.077	.078	.088
Model significance	p=.000	p=.000	p=.000	P=.000	P=.000	P=.073

a = aOR is adjusted for age at childbirth, education level, civil status, household income, number of children and the time of last childbirth. Highlight = identification of significance.

Indicators related to the affordability of maternal care show that in all three countries having health complications during the maternal period is significantly associated with paying OOP, experiencing a financial burden, paying informally and using personal connections, while giving birth in a private facility is significantly associated to paying less informally and using fewer personal connections. Furthermore, having C-section is significantly associated with facing a financial burden, all forms of OOP payments and using personal connections in Romania and Bulgaria, but interestingly has the opposite association in Moldova. With respect to approachability, in all three countries women who had fewer health complications and a higher number of antenatal visits were more satisfied with the way providers approached them, while giving birth in a private facility increased the satisfaction during the postnatal period (i.e. attitude, communication and provision of information) (see Table 5.3 for illustration and Appendix D1-D4 for more details). As mentioned above, no regression analysis was performed on acceptability of maternal care, due to the lack of variation in the indicators in this category.

DISCUSSION

Our results identify several shortcomings in the use of maternal care in Romania, Bulgaria and Moldova, including high rates of C-sections, low numbers of antenatal and postnatal care visits, existence of informal payments and use of personal connections to obtain desired care. Women who have health complications, women who have a C-section and those who give birth in a public facility and have fewer antenatal check-ups are more likely to face access-related barriers.

The most striking result is the extremely high rate of C-sections, especially in Romania and Bulgaria. Official statistics on the rate of C-sections are generally lacking. Nevertheless, previous empirical evidence is in line with our findings. Some sources suggest that in 2015 in Bulgaria the rate of C-sections in public facilities was 35-45% and in private facilities 65-95%, while in Romania the overall rate of C-sections in 2012 was reported to be 41.2%.[129,130] A study on C-sections in Romania suggests that financial incentives for healthcare providers, as well as women's beliefs and fears, contribute to the high number of C-sections.[130]

Another important shortcoming identified in our study is the insufficient number of antenatal visits, especially in Moldova. WHO recommends a minimum of 8 antenatal visits and 4 postnatal visits for optimal maternal and new-born health outcomes.[19,129] While Moldova faces the highest barriers in the availability of maternal care among the three countries, the most problematic availability indicator in the three countries is the shortage of medical staff. We found that the perceived shortage of maternal care providers is associated with fewer antenatal care visits and the presence of health

complications. In other words, unsurprisingly, women with health complications find the shortage of staff more of a problem than women without complications. The shortage of staff (e.g. in rural areas) would result in some women having fewer antenatal care visits. The literature suggests that access to healthcare in rural areas in the three countries is especially poor, as healthcare professionals are reluctant to work in villages because of the lower standard of living compared to cities.[27,108] The apparent shortage of physicians and nurses can also be explained by professionals emigrating to countries such as Germany, France and the United States that offer better working conditions and higher incomes.[27,108] To address this problem, incentives for professionals to stay in the country or to work in rural areas could be considered.

Satisfaction with maternal care provider skills and conditions at facilities was more prevalent in the private sector. The low level of satisfaction with maternal care in the public sector can be explained by insufficient government investments, shortage of staff and inefficient use of scarce public resources in the three countries.[27,45,108]

Our results also indicate that women underutilised postnatal care and were least satisfied with provider skills, communication and information provision during the postnatal period. These results point to a wider problem of inadequate provision of postnatal care which is neglected in many countries around the globe.[4]

Women in our study, especially in Romania and those with complications, face a financial burden due to OOP payments and women who gave birth in public facilities paid informally more often. Previous literature has identified the existence of high formal and informal OOP payments for maternal care in the three countries,[45,108] and our study confirms these findings. Furthermore, the (informal) OOP payments do not only point to a high level of informality in the three health systems, but also to potential barriers in accessing care [122]. Women also reported frequently using personal connections when seeking maternal care, which is another form of informality in the health system. Chapter 4 of this dissertation found that women in Latvia also often used personal connections to ensure faster access to or better quality of care.[43]

We also found that many women in all three countries were dissatisfied with provider attitudes, as already mentioned with regard to postnatal care. Disrespectful or rude communication, lack of explanation or negative attitudes could lead to adverse health outcomes and unwillingness to seek care. Our results suggest that giving birth in a public facility, having health complications and a lower number of antenatal visits are associated with such approachability problems. Addressing these issues, for example by offering additional training to health professionals, would be of great importance for improving relationships with health professionals, women's experience with care and, ultimately, health outcomes.[131] Poor attitudes and communication skills might also be

attributed to the shortage of health professionals mentioned above, which can mean that health workers are overworked and lack motivation.[43,108] This means that structural changes and investments in maternal care are needed as well.

Strengths and limitations

The findings of our study need to be seen in the context of its strengths and limitations. The data collection instrument was piloted in a previous study and its translations were pre-tested, which improved measurement accuracy. Yet, it is important to recognise that the generalisability of our findings to all women receiving maternal care in the three countries is limited due to our use of one of the social media networks. At best, the results can be extrapolated to those women who gave birth during 2013-2017 and were part of Facebook 'mommy' groups. Background characteristics among childbearing women as well as data on how common it is to belong to such Facebook groups in the three countries are not available, which prevents us from making a comparison with our sample. Another limitation is related to the abundance of information in social media that does not allow many people to go over it. Thus, women who less frequently used social media platforms such as Facebook were less likely to see the survey invitation. This was to some extent mitigated by sending a reminder and thus allowing the invitation to appear at the top of posted messages again. Group administrators were strict with granting access to the groups, and group members can be assumed to be predominantly mothers (to be). Eligible respondents were only those who had given birth and had received maternal care in these three countries in the preceding four years. Nevertheless, selection bias cannot be ruled out, as more than half of the women reported having only one child and women with their first child might be more likely to be part of such online groups. Furthermore, some women might have been motivated to complete the questionnaire because of their positive or negative experiences. Minor differences in demographic structure, culture, socio-economic status, general attitude and education might affect comparability across countries. Moreover, sample size differences in the three countries, especially the smaller sample size in Moldova, might affect the statistical strength of our findings.

5.5. CONCLUSIONS

Our study identifies and compares barriers to accessing adequate maternal care in Romania, Bulgaria and Moldova and explores the association between access-related indicators and various demographic characteristics and health status. We found extremely high rates of C-sections in Romania and Bulgaria, as well as a low number of antenatal and postnatal care visits in all three countries, but especially in Moldova, which indicates problems in the provision of appropriate care. The results also suggest that in all three countries women who have complications during pregnancy, who have C-sections, give

birth in a public facility and those who receive fewer antenatal care visits face barriers to accessing adequate maternal care. These barriers relate to four of the five dimensions of access we examined: availability (i.e. shortage of human resources, geographical distance, time, waiting lists, transportation and facility opening hours), appropriateness (i.e. satisfaction with provider skills and maternal care facilities), approachability (i.e. attitude, communication and provision of information) and affordability of care. Making informal payments and using personal connections were found to be common. OOP payments, including informal ones, pose a barrier to access, in particular for women with health complications.

These results help to inform relevant maternal care stakeholders and stress the need for a range of measures to improve access to adequate maternal care in the three countries. This involves reducing the financial burden on women during the maternal period, especially for those having complications and having C-section. Furthermore, there is a need for measures to address informalities in receiving maternal care, improve the adequacy of postnatal care provision, increase the number of antenatal and postnatal visits women receive, as well as to reduce the exceptionally high rates of C-sections in Romania and Bulgaria.

6

The affordability and appropriateness of inpatient maternal care in Ukraine

The chapter draws upon:

Miteniece, E., Pavlova, M., Rechel, B., Groot, W. The affordability and appropriateness of inpatient maternal care in Ukraine. *Submitted for publication.*

ABSTRACT

Introduction:

Informal payments and a lack of resources raise concerns about the affordability and appropriateness of maternal care in Ukraine. This study analyses the affordability and appropriateness of Ukraine's maternal care services by comparing inpatient maternal care users with patients using other types of inpatient care.

Methods

We use data from the national household survey "Health Index Ukraine". Our sample consisted of 1041 respondents. The average treatment effect on the treated was calculated between cases and controls after matching.

Results

Maternal inpatient care users are more often requested and more likely to pay informally, and pay a higher amount than non-maternal care users. However, they face fewer difficulties to cover the costs of diagnostic tests and medicines. Inpatient care satisfaction is low in both groups, but maternal care users are more satisfied overall, specifically regarding treatment efficiency, sanitary conditions at facilities, access to diagnostic tests and qualifications of medical doctors.

Conclusions

These findings highlight the need to address informalities and the financial burden of maternal care and to improve quality of care.

6.1. INTRODUCTION

Ukraine's maternal care system still has many features of the Soviet period Semashko model and is considered to be one of the weakest among the post-communist European countries.[49] While bed numbers are high, with 891 public hospital beds per 100,000 population in 2013, facilities tend to have outdated equipment and face problems in the provision of complex care. The health system suffers from a lack of health workers, inefficient allocation of resources, long hospital stays and weak primary care.[49] Furthermore, patients face barriers in accessing care, including geographical distance, unavailability of services, unprofessional attitudes of health workers (e.g. resulting in stigma and shame), and lack of information and trust in the health system.[132] These barriers may lead, among others, to barriers in accessing adequate maternal care.[54,133]

Ukraine's public spending on health was 3.1% of GDP in 2017, which is far below the average of the WHO European Region. OOP payments amounted to 52% of total health expenditure in 2017, which is among the highest in the European region.[9] In 2017, households spent on average nearly 11% of their income on pharmaceuticals and 92% of the population feared financial difficulties in case of illness.[134] In 2018, a quarter of Ukrainians did not receive medical services due to a lack of money and nearly half of them said it was difficult or impossible to find the resources for treatment.[134]

Among the various forms of OOP payments are informal payments, accounting for about 20% of OOP expenditure.[8,21,30] Recent evidence shows that more than two thirds of Ukrainians engage in informal practices, mostly involving cash payments in state healthcare institutions.[50] Additionally, 55% of patients make quasi-formal payments in the form of contributions to charitable funds at the hospital that they visit. Only 14% of these patients engage in this practice spontaneously, while the remainder do so in order to gain access to healthcare.[122]

As already seen in countries reviewed in previous Chapters 3-5, in Ukraine maternal care is a health policy priority. However, similar to the entire healthcare sector in Ukraine, it suffers from insufficient funding, which results in low quality and poor access to services.[21] Antenatal services are mostly provided at specialised outpatient clinics by a gynaecologist/obstetrician. During antenatal care, women receive a personal record book, which is their patient file. This book contains information about their assigned place of childbirth. Childbirth occurs in secondary care centres and tertiary care perinatal centres. Mothers are on average discharged within 3 days in case of a vaginal birth and 5-7 days in case of a C-section. Women carefully choose their obstetrician and either agree beforehand about paying informally or reach another informal agreement. The bargaining process about care and payment between a pregnant woman (including her partner) and the obstetrician is an important part of the pre-childbirth arrangement.[5,49]

As already observed in previous Chapters, this Chapter also shows that the informal payments in the Ukrainian healthcare sector and the overall lack of resources for healthcare raise concerns about both the affordability and appropriateness of care, including maternal care 21. The government of Ukraine has acknowledged these shortcomings. In 2015, a Strategic Advisory Group was established to guide reforms of the health system 5,50. An inpatient financing reform was designed during 2016 – 2019 and was launched in April 2020.

The purpose of this study is to analyse the affordability and appropriateness of inpatient maternal care services in Ukraine. To determine whether the experience of maternal care users differs from that of other healthcare users, we compare the group of inpatient maternal care users to a group that used other types of inpatient care. By comparing the maternal and non-maternal inpatient care user groups, results may indicate possible differences in affordability and appropriateness.

We use nationally representative data from a survey conducted on an annual basis since 2016. To conceptualise affordability and appropriateness of inpatient maternal care, we make use of the framework of Levesque (2013) employed in all previous Chapters. In this framework, five aspects of access are distinguished: appropriateness, affordability, availability, approachability and acceptability.[15] Given the available data, this study analyses the first two aspects of appropriateness and affordability, which were explained in more detail in Chapter 1.

6.2. METHODS

This study uses data from three consecutive waves of the "Health Index Ukraine", a national household survey conducted in 2016, 2017 and 2018.[134] The study has thus a repeated cross-sectional design. The purpose of the Health Index survey is to systematically monitor the attitudes, experiences and behaviours of Ukrainian citizens with regard to healthcare services. The survey has been initiated by the International Renaissance Foundation (a Ukrainian NGO) and the data have been collected by the Kyiv International Institute of Sociology.

For each wave, random multi-stage sampling was used. The first stage included a sample from each region (oblast); the locations were randomly chosen proportionally to their population size. The second stage included randomisation of electoral districts. Then the streets, buildings and apartments/houses in each chosen electoral district were selected at random. The last stage included selecting a participant within a household to be interviewed. For this purpose, a modified Kish grid selection procedure was used. When visiting the household, the interviewer drew up a list of potential respondents by

gender and age, and selected every 3rd from this list (Health Index, 2018). The sample in each wave was representative of the adult population (aged 18 years and over) of Ukraine at the national level and at the regional level for each of the 24 oblasts of Ukraine. The distribution of participants by key demographic characteristics corresponds to the composition of the registered population.[134]

Data were collected at the place where the respondents lived. The data collection was done by means of face-to-face interviews in order to maximise participation and elicit spontaneous answers of the respondents. About 238 interviewers were involved in the field phase each year. Before the interviews, all team leaders were briefed remotely; they then provided an on-site briefing to the interviewers. During the administration of the survey, the network coordinator answered questions of team leaders and interviewers via phone. For each survey year, a pre-test was done with about 25 participants from Kyiv and other towns and villages.[134]

During the interviews, the respondents were asked 200 (mostly closed) questions about their perceived health status, their perceptions of different aspects of the health system and their satisfaction with healthcare services, including the performance of medical staff.[135] Interviews were conducted in Ukrainian or Russian and lasted on average 39 minutes. Respondents with substantially longer interviews were those who had used both out- and in-patient services in the preceding year.[135]

In line with the current legislation in Ukraine, the "Health Index Ukraine" survey did not require ethical approval. The study instrument (questionnaire) and the data collection methods were reviewed by a scientific board (e.g. whether to focus on healthcare users or on representatives of households). Verbal informed consent was obtained during the interview from each participant.

For the purpose of this study, three anonymised datafiles (one datafile per wave) were provided to us after signing a non-disclosure agreement for re-using the data. No personal data were included that could identify the respondents. The data contained information on admission to inpatient care facilities during the past 12 months. We selected adult women aged 18-44 years for our study sample. The data allowed us to analyse how maternal inpatient care users experienced the affordability and appropriateness of inpatient care compared to users of non-maternal inpatient care. Affordability variables (8 variables in total) were related to various forms of OOP payments for the last hospitalisation, i.e. contributions to charitable funds, formal and informal payments, as well as the total amount paid. Furthermore, there were variables on the financial burden and the need to borrow money in order to cover these medical expenses. Appropriateness variables (7 variables in total) were related to the satisfaction with various aspects of inpatient care, i.e. sanitary conditions, friendliness

and qualification of staff, treatment efficiency, access to diagnostic tests, and overall satisfaction with inpatient care.

The sample that we used in the analysis was divided into two groups based on the reason for inpatient care admission: maternal care use versus use of other health services. Inpatient maternal care users were viewed as the treatment group (cases) and users of inpatient non-maternal care were the control group (controls). Matching methods were used to make the two groups of female patients comparable. Five characteristics were used in the matching analysis: age group, type of settlement, education level, household financial status and hospitalisation urgency. We applied the nearest neighbour matching method, which minimises the distance between neighbours using Mahalanobis distance measurement. We allowed for more than one match for each case. The Mahalanobis distance has the advantage of utilising group means and variances for each variable, and the problems of scale and correlation inherent in the Euclidean distance are not an issue. Mahalanobis matching was chosen because it does not rely on any functional form of the distribution. To check the robustness of the Mahalanobis estimator, we also applied propensity score matching.[136]

The average treatment effect on the treated (ATT) was calculated in the matched samples to determine the differences in the affordability and appropriateness of inpatient care between maternal inpatient care users and users of non-maternal care. The ATT was calculated for each affordability and appropriateness response variable mentioned above and for each year separately. To increase the statistical power, we also performed the ATT analysis on the pooled data, i.e. all three years combined. In the pooled data analysis, the matching of the cases and controls described above was extended to include an exact matching for the survey year. In all analyses, our study applied a statistical significance level of $p<0.05$. The statistical software package STATA© SE 15 was used to perform the analysis.

6.3. RESULTS

In total, 30,556 respondents were interviewed over three years (Health Index, 2018). Our study sample (adult women in reproductive age, 18-44 years, who were hospitalised in the prior 12 months), consisted of 1041 respondents; 369 in 2016, 359 in 2017 and 313 in 2018. These numbers include both users of maternal (cases) and non-maternal (controls) inpatient women.

As indicated in Table 6.1, all respondents were women between the age of 18 and 44. Table 6.1 shows that, before matching the samples, more than 60% of both, maternal and non-maternal groups, lived in urban settings, their age was on average 28-33

Table 6.1: Sample characteristics (independent variables) in years 2016, 2017, 2018 before matching

	2016 (wave1)					2017 (wave2)					2018 (wave3)					Total, all waves				
	Maternal care users		Non-maternal care users		Compar-ison	Maternal care users		Non-maternal care users		Compar-ison	Maternal care users		Non-maternal care users		Compar-ison	Maternal care users		Non-maternal care users		Compar-ison
Age (in years)					p=0.001[a]*					p=0.000[a]*					p=0.000[a]*					p=0.000[a]*
Mean	28.04		33.92			29.00		33.3			29.89		32.75			28.94		33.36		
SD	5.48		6.96			5.64		7.34			5.804		7.529			5.668		7.268		
Total (N)	124		245			129		230			109		204			362		679		
Type of settlement					p=0.697[b]					p=0.959[b]					p=0.352[b]					p=0.436[b]
Urban	77	(62.1%)[c]	147	(60%)[c]		80	(62%)[c]	142	(61.7%)[c]		70	(64.2%)[c]	120	(58.8%)[c]		227	(62.7%)[c]	409	(60.2%)[c]	
Rural	47	(37.9%)	98	(40%)		49	(38%)	88	(38.3%)		39	(35.8%)	84	(41.2%)		135	(37.3%)	270	(39.8%)	
Total (N)	124	(100%)	245	(100%)		12	(100%)	230	(100%)		109	(100%)	204	(100%)		362	(100%)	679	(100%)	
Education					p=0.587[d]					p=0.146[d]					p=0.972[d]					p=0.239[d]
Primary or secondary	4	(3.2%)[c]	9	(3.7%)[c]		1	(0.8%)[c]	4	(1,7%)[c]		3	(2.8%)[c]	1	(0.5%)[c]		8	(2.2%)	14	(2.1%)	
Highschool completed	29	(23.4%)	47	(19.2%)		26	(20.2%)	37	(16,1%)		27	(24.8%)	36	(17.6%)		82	(22.7%)	120	(17.7%)	
Vocational	17	(13.7%)	45	(18.4%)		15	(11.6%)	39	(17,0%)		11	(10.1%)	37	(18.1%)		43	(11.9%)	121	(17.8%)	
Specialised secondary	23	(18.5%)	64	(26.1%)		27	(20.9%)	69	(30,0%)		28	25.7%)	63	(30.9%)		78	(21.6%)	196	(28.9%)	
Basic higher education	9	(7.3%)	7	(2.9%)		10	(7.8%)	24	(10,4%)		2	(1.8%)	13	(6.4%)		21	(5.8%)	44	(6.5%)	
University degree	40	(32.3%)	73	(29.8%)		50	(38.8%)	53	(23,0%)		38	(34.9%)	54	(26.5%)		128	(35.4%)	180	(26.5%)	
PhD, DSc	2	(1.6%)	0	(0%)		0	(0%)	3	(1,3%)		0	(0%)	0	(0%)		2	(0.6%)	3	(0.4%)	
Refusal	0	(0%)	0	(0%)		0	(0%)	1	(0,4%)		0	(0%)	0	(0%)		0	(0%)	1	(0.2%)	
Total (N)	124	(100%)	245	(100%)		12	(100%)	230	(100%)		109	(100%)	204	(100%)		362	(100%)	679	(100%)	
Financial status					p=0.668[d]					p=0.051[d]					p=0.414[d]					p=0.058[d]
Not enough for food	8	(6.5%)[c]	33	(13.5%)[c]		6	(4.7%)[c]	18	(7.8%)[c]		4	(3.7%)[c]	14	(6.9%)[c]		18	(5%)	65	(9.6%)	
Enough for food	72	(58.1%)	117	(47.8%)		55	(42.6%)	118	(51.3%)		54	(49.5%)	102	(50%)		181	(50%)	337	(49.6%)	
Enough for food & clothes	35	(28.2%)	84	(84%)		58	(45%)	75	(32.6%)		42	(38.5%)	73	(35.8%)		135	(37.3%)	232	(34.2%)	
Can also buy expensive	7	(5.6%)	3	(34.3%)		9	(7%)	10	(4.3%)		6	(5.5%)	5	(2.5%)		22	(6.1%)	18	(2.7%)	
goods	0	(0%)	1	(1.2%)		0	(0%)	1	(0.4%)		1	(0.9%)	2	(1%)		1	(0.3%)	4	(0.6%)	
Can also make savings	2	(1.6%)	4	(0.4%)		1	(0.8%)	4	(1.7%)		2	(1.8%)	5	(2.5%)		5	(1.4%)	13	(0.6%)	
Difficult to answer	0	(0%)	3	(1.6%)		0	(0%)	4	(1.7%)		0	(0%)	3	(1.5%)		0	(0%)	10	(1.9%)	
Refusal	124	(100%)	245	(100%)		12	(100%)	230	(100%)		109	(100%)	204	(100%)		362	(100%)	679	(100%)	
Total (N)																				
Urgent hospitalisation					P=0.709[d]					P=0.101[d]					p=0.000[d]*					p=0.001[d]*
Yes	44	(37.3%)[c]	85	(35.3%)[c]		52	(40.6%)[c]	73	(32.2%)[c]		57	(52.3%)[c]	61	(30.2%)[c]		153	(43.1%)	219	(32.7%)	
No	74	(62.7%)	156	(64.7%)		76	(59.4%)	154	(67.8%)		52	(47.7%)	141	(69.8%)		202	(56.9%)	451	(67.3%)	
Total (N)	118	(100%)	241	(100%)		12	(100%)	227	(100%)		109	(100%)	202	(100%)		355	(100%)	670	(100%)	

a = Independent samples t-test
b = Chi square test
c = Summary statistics, Cross-tabs
d= Two-sample Wilcoxon rank-sum (Mann-Whitney) test
*= identification of significance, p<0

years and they represented all education categories, with the majority being university graduates or having secondary specialised education. Since many participants did not disclose their household income, we analysed their financial status by looking at their purchasing power. Even though all financial status categories were somewhat represented, the majority (more than 80%) of participants from maternal and non-maternal groups across the three survey years could only afford basic goods such as food and/or clothing. Nevertheless, often the last hospitalisation (i.e. the hospitalisation included in the analysis) was not reported to be urgent, even though there was some variation between the groups.

Table 6.2 and Table 6.3 present descriptive statistics on the affordability and appropriateness outcome variables before matching. Appendix E1 shows how matching on the selected independent variables improved the balance between the cases and controls in the three waves combined. It displays the matching balance sheet for each question (dependent variable) separately. Table 6.4 presents the treatment effect after matching, for each survey year separately and also for the three years combined (pooled data). Below, we describe the results for the pooled data, which provides more precise estimates than the results for each of the waves separately. However, all tables provide the opportunity to view the variations among the different survey years by displaying results in tables for each year separately as well. Tables 6.1 and 6.4 illustrate that in most cases in which at least one single year sample shows significant results, the significance can be found in the total sample as well. Tables 6.2 and 6.3 present only descriptive results for pooled data and for each survey wave separately.

Affordability

Table 6.2 presents the results on affordability before matching. During the last admission to inpatient care, maternal care users paid on average 222 UAH which is about 7.3 Euro(1 hryvnia = 0.033 Euro, exchange rate on 31st of March, 2020) in charitable funds, while non-maternal care users paid 263 UAH (8.65 Euro). At the cash desk, maternal care users paid 405 UAH (13.3 Euro), while non-maternal care users paid 676 UAH (22.2 Euro). Informally, maternal care users paid on average 694 UAH (22.8 Euro) compared to 339 UAH (11.1 Euro) paid by non-maternal care users. These Figures indicate that maternal care users paid on average a higher amount informally, but non-maternal care users paid more at the cash desk and to charitable funds. Table 6.2 also shows that more than 50% of maternal care users and more that 70% of non-maternal care users had difficulties covering the costs of medicines, while 25% of maternal care users and 47% of non-maternal care users had difficulties covering the costs of diagnostic tests. On average, maternal care users needed to borrow 1403 UAH (46.1 Euro) and non-maternal care users 2219 UAH (72.9 Euro) in order to cover the costs for their last inpatient care admission.

The ATT in Table 6.4 indicates the statistically significant differences between maternal inpatient care users (cases) and non-maternal care users (controls) in the years 2016-2018 after matching. Table 6.4 shows a number of statistically significant differences between the cases and controls, confirming the findings in Table 6.2 that maternal inpatient care users made informal payments more often, paid higher amounts (11.7 Euro more), and were more often requested to make such payments. While Table 6.2 has shown that payments imposed a financial burden on both maternal and non-maternal care users, Table 6.4 implies that maternal care users suffered significantly less from the financial burden to cover diagnostic tests than non-maternal care users.

Table 6.2: Care affordability reported by maternal and non-maternal inpatient care users in the years 2016, 2017, 2018 before matching

	2016 (wave1)				2017 (wave2)				2018 (wave3)				Total, all waves			
	Maternal care users		Non-maternal care users		Maternal care users		Non-maternal care users		Maternal care users		Non-maternal care users		Maternal care users		Non-maternal care users	
How much did you pay into charitable funds? (in hryvnia) [a]																
Mean	92,05		76,19		244.88		155.77		410.93		721.50		222.660		263.064	
SD	157,36		353,68		822.20		674.13		1980.639		7751.890		1089.647		3870.533	
Total (N)	124		245		129		230		86		167		362		679	
Were you requested to pay into charitable funds?																
Yes	38	(30.6%)	57	(23.3%)	42	(32.6%)	58	(25.2%)	38	(34.9%)	52	(25.5%)	118	(32.6%)	167	(24.6%)
No	76	(61.3%)	161	(65.7%)	79	(61.2%)	158	(68.7%)	62	(56.9%)	138	(67.6%)	217	(59.9%)	457	(67.3%)
Difficult to say	10	(8.1%)	23	(9.4%)	5	(3.9%)	8	(3.5%)	5	(4.6%)	12	(5.9%)	20	(5.5%)	43	(6.3%)
Refusal	0	(0%)	4	(1.6%)	3	(2.3%)	6	(2.6%)	4	(3.7%)	2	(1%)	7	(1.9%)	12	(1.8%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
How much did you pay at the cash desk? (in hryvnia) [a]																
Mean	301.49		314.32		7.65		7.62		830.20		1318.22		404.503		675.695	
SD	690.03		1327.77		23.42		23.17		2153.500		8140.576		1215.564		5168.003	
Total (N)	124		245		129		230		79		163		362		679	
How much did you pay informally? (in hryvnia) [a]																
Mean	677.19		295.09		330.59		708.22		905.26		565.82		693.879		338.860	
SD	1533.13		921.03		864.76		5460.96		2682.233		2371.823		1814.16		1553.269	
Total (N)	124		245		129		230		76		158		362		679	
Were you requested to pay informally?																
Yes	23	(18.5%)	26	(10.6%)	29	(22.5%)	30	(13%)	22	(20.2%)	32	(15.7%)	74	(20.4%)	88	(13%)
No	85	(68.5%)	180	(73.5%)	89	(69%)	179	(77.8%)	73	(67%)	152	(74.5%)	247	(68.2%)	511	(75.3%)
Difficult to say	12	(9.7%)	29	(11.8%)	2	(1.6%)	8	(3.5%)	3	(2.8%)	12	(5.9%)	17	(4.7%)	49	(7.2%)
Refusal	4	(3.2%)	10	(4.1%)	9	(7%)	13	(5.7%)	11	(10.1%)	8	(3.9%)	24	(6.6%)	31	(4.6%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
Was it difficult to cover the costs for medicines?																
Impossible	6	(5%)	13	(5.4%)	4	(3.2%)	5	(2.2%)	6	(6.2%)	9	(4.6%)	16	(4.6%)	27	(4.1%)
Difficult	62	(51.7%)	174	(72.5%)	52	(41.6%)	148	(65.8%)	45	(46.4%)	144	(73.1%)	159	(45.3%)	466	(70.2%)
Not Difficult	31	(25.8%)	36	(15%)	53	(42.4%)	55	(24.4%)	32	(33%)	41	(20.8%)	116	(33.1%)	132	(19.9%)
No expenditures	9	(7.5%)	7	(2.9%)	7	(5.6%)	4	(1.8%)	14	(14.4%)	3	(1.5%)	30	(8.6%)	14	(2.1%)
Difficult to say	11	(9.2%)	9	(3.8%)	5	(4%)	12	(5.3%)	0	(0%)	0	(0%)	25	(7.1%)	22	(3.3%)
Refusal	1	(0.8%)	1	(0.4%)	4	(3.2%)	1	(0.4%)	0	(0%)	0	(0%)	5	(1.4%)	3	(0.5%)
Total (N)	120	(100%)	240	(100%)	125	(100%)	225	(100%)	97	(100%)	197	(100%)	351	(100%)	664	(100%)
Was it difficult to cover the costs for diagnostics?																
Impossible	1	(0.8%)	5	(2.1%)[c]	0	(0%)	3	(1.3%)	1	(1%)	4	(2%)	2	(0.6%)	12	(1.8%)
Difficult	27	(22.5%)	101	(42.1%)	35	(28.0%)	98	(43.6%)	24	(23.8%)	101	(51.5%)	86	(24.5%)	300	(45.2%)
Not Difficult	48	(40%)	75	(31.3%)	57	(45.6%)	83	(36.9%)	40	(39.6%)	63	(32.1%)	145	(41.3%)	221	(33.3%)
No expenditures	32	(26.7%)	46	(19.2%)	24	(19.2%)	24	(10.7%)	36	(35.6%)	28	(14.3%)	92	(26.2%)	98	(14.8%)
Difficult to say	11	(9.2%)	12	(5%)	5	(4%)	16	(7.1%)	0	(0%)	0	(0%)	21	(6%)	30	(4.5%)
Refusal	1	(0.8%)	1	(0.4%)	4	(3.2%)	1	(0.4%)	0	(0%)	0	(0%)	5	(1.4%)	3	(0.5%)
Total (N)	120	(100%)	240	(100%)	125	(100%)	225	(100%)	101	(100%)	196	(100%)	351	(100%)	664	(100%)
How much money did you need to borrow to cover all expenses? (in hryvnia) [a]																
Mean	898.36		1406.25		1142.73		2144.56		2551.49		3518.79		1402.592		2219.306	
SD	4672.27		5264.68		2363.25		4497.92		6694.999		6226.054		4931.002		5405.793	
Total (N)	120		240		71		171		76		160		267		571	

[a] Ukrainian hryvnia, 1 hryvnia = 0.033 Euro, exchange rate on 31st of March, 2020.

Appropriateness

Table 6.3 presents the results on the appropriateness of inpatient care before matching. Women were asked to rate their satisfaction with sanitary conditions, qualifications of medical doctors, friendliness of staff, treatment efficiency and also their overall satisfaction with inpatient care during the last hospitalisation. Descriptive statistics indicate that, for all outcome variables, users of maternal inpatient care were more satisfied compared to non-maternal inpatient care users (see Table 6.3). However, the

level of overall satisfaction with inpatient care in both groups was rather low, as only 40.5%-48.9% of both groups rated the care as good or very good. Table 6.3 also shows that both groups were least satisfied with access to diagnostic tests (31.7%-35.4% rated this as good or very good), treatment efficiency (39.7%) and sanitary conditions (42%). These variables were rated especially low among non-maternal inpatient care users.

Table 6.3: Care appropriateness reported by maternal and non-maternal inpatient care users in the years 2016, 2017, 2018 before matching

How do you rate:	2016 (wave1)				2017 (wave2)				2018 (wave3)				Total, all waves			
	Maternal care users		Non-maternal care users		Maternal care users		Non-maternal care users		Maternal care users		Non-maternal care users		Maternal care users		Non-maternal care users	
Sanitary conditions																
Very bad	2	(1.6%)	8	(3.3%)	3	(2.3%)	5	(2.2%)	1	(0.9%)	8	(3.9%)	6	(1.7%)	21	(3.1%)
Bad	12	(9.7%)	33	(13.5%)	9	(7%)	29	(12.6%)	9	(8.3%)	25	(12.3%)	30	(8.3%)	87	(12.8%)
Acceptable	44	(35.5%)	105	(42.9%)	36	(27.9%)	89	(38.7%)	33	(30.3%)	88	(43.1%)	113	(31.2%)	282	(41.5%)
Good	57	(46%)	77	(31.4%)	70	(54.3%)	89	(38.7%)	54	(49.5%)	69	(33.8%)	181	(50%)	235	(34.6%)
Very good	8	(6.5%)	21	(8.6%)	10	(7.8%)	17	(7.4%)	12	(11%)	12	(5.9%)	30	(8.3%)	50	(7.4%)
Difficult to say	1	(0.8%)	1	(0.4%)	1	(0.8%)	0	(0%)	0	(0%)	1	(0.5%)	2	(0.6%)	2	(0.3%)
Refusal	0	(0%)	0	(0%)	0	(0%)	1	(0.4%)	0	(0%)	1	(0.5%)	0	(0%)	2	(0.3%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
Access to diagnostics																
Very bad	5	(4%)	9	(3.7%)	1	(0.8%)	11	(4.8%)	0	(0%)	7	(3.4%)	6	(1.7%)	27	(4%)
Bad	9	(7.3%)	40	(16.3%)	12	(9.3%)	35	(15.2%)	16	(14.7%)	37	(18.1%)	37	(10.2%)	112	(16.5%)
Acceptable	53	(42.7%)	102	(41.6%)	61	(47.3%)	108	(47%)	60	(55%)	91	(44.6%)	174	(48.1%)	301	(44.3%)
Good	44	(35.5%)	69	(28.2%)	44	(34.1%)	57	(24.8%)	26	(23.9%)	51	(25%)	114	(31.5%)	177	(26.1%)
Very good	7	(5.6%)	18	(7.3%)	5	(3.9%)	9	(3.9%)	2	(1.8%)	11	(5.4%)	14	(3.9%)	38	(5.6%)
Difficult to say	6	(4.8%)	7	(2.9%)	5	(3.9%)	8	(3.5%)	5	(4.6%)	6	(2.9%)	16	(4.4%)	21	(3.1%)
Refusal	0	(0%)	0	(0%)	1	(0.8%)	2	(0.9%)	0	(0%)	1	(0.5%)	1	(0.3%)	3	(0.4%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	100%	109	(100%)	204	(100%)	162	(100%)	679	(100%)
Qualification of doctors																
Very bad	0	(0%)	3	(1.2%)	2	(1.6%)	4	(1.7%)	3	(2.8%)	5	(2.5%)	5	(1.4%)	12	(1.8%)
Bad	2	(1.6%)	9	(3.7%)	5	(3.9%)	17	(7.4%)	3	(2.8%)	15	(7.4%)	10	(2.8%)	41	(6%)
Acceptable	42	(33.9%)	103	(42%)	26	(20.2%)	80	(34.8%)	41	(37.6%)	82	(40.2%)	109	(30.1%)	265	(39.%
Good	57	(46%)	88	(35.9%)	78	(60.5%)	92	(40%)	50	(45.9%)	73	(35.8%)	185	(51.1%)	253	(37.3%)
Very good	21	(16.9%)	35	(14.3%)	16	(12.4%)	30	(13%)	9	(8.3%)	23	(11.3%)	46	(12.7%)	88	(13%)
Difficult to say	2	(1.6%)	6	(2.4%)	2	(1.6%)	6	(2.6%)	3	(2.8%)	5	(2.5%)	7	(1.9%)	17	(2.5%)
Refusal	0	(0%)	1	(0.4%)	0	(0%)	1	(0.4%)	0	(0%)	1	(0.5%)	0	(0%)	3	(0.4%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
Friendliness of doctors																
Very bad	1	(0.8%)	5	(2.0%)	3	(2.3%)	1	(0.4%)	3	(2.8%)	5	(2.5%)	7	(1.9%)	11	(1.6%)
Bad	4	(3.2%)	14	(5.7%)	6	(4.7%)	8	(3.5%)	8	(7.3%)	12	(5.9%)	18	(5%)	34	(5%)
Acceptable	44	(35.5%)	98	(40%)	37	(28.7%)	89	(38.7%)	38	(34.9%)	79	(38.7%)	119	(32.9%)	266	(39.2%)
Good	56	(45.2%)	89	(36.3%)	61	(47.3%)	104	(45.2%)	45	(41.3%)	84	(41.2%)	162	(44.8%)	277	(40.8%)
Very good	18	(14.5%)	37	(15.1%)	20	(15.5%)	25	(10.9%)	14	(12.8%)	23	(11.3%)	52	(14.4%)	85	(12.5%)
Difficult to say	1	(0.8%)	2	(0.8%)	2	(1.6%)	2	(0.9%)	1	(0.9%)	0	(0%)	4	(1.1%)	4	(0.6%)
Refusal	0	(0%)	0	(0%)	0	(0%)	1	(0.4%)	0	(0%)	1	(0.5%)	0	(0%)	2	(0.3%)
Total (N)	124	(100%)	245	100%	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
Friendliness of nurses																
Very bad	1	(0.8%)	4	(1.6%)	3	(2.3%)	5	(2.2%)	5	(4.6%)	6	(2.9%)	9	(2.5%)	15	(2.2%)
Bad	7	(5.6%)	15	(6.1%)	4	(3.1%)	20	(8.7%)	10	(9.2%)	13	(6.4%)	21	(5.8%)	48	(7.1%)
Acceptable	47	(37.9%)	111	(45.3%)	46	(35.7%)	82	(35.7%)	37	(33.9%)	76	(37.3%)	130	(35.9%)	269	(39.6%)
Good	51	(41.1%)	77	(31.4%)	59	(45.7%)	94	(40.9%)	41	(37.6%)	84	(41.2%)	151	(41.7%)	255	(37.6%)
Very good	17	(13.7%)	33	(13.5%)	15	(11.6%)	25	(10.9%)	15	(13.8%)	23	(11.3%)	47	(13%)	81	(11.9%)
Difficult to say	1	(0.8%)	4	(1.6%)	2	(1.6%)	3	(1.3%)	1	(0.9%)	1	(0.5%)	4	(1.1%)	8	(1.2%)
Refusal	0	(0%)	1	(0.4%)	0	(0%)	1	(0.4%)	0	(0%)	1	(0.5%)	0	(0%)	3	(0.4%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
Treatment efficiency																
Very bad	1	(0.8%)	4	(1.6%)	2	(1.6%)	4	(1.7%)	1	(0.9%)	7	(3.4%)	4	(1.1%)	15	(2.2%)
Bad	5	(4%)	17	(6.9%)	4	(3.1%)	17	(7.4%)	7	(6.4%)	20	(9.8%)	16	(4.4%)	54	(8%)
Acceptable	37	(29.8%)	103	(42%)	34	(26.4%)	84	(36.5%)	37	(33.9%)	77	(37.7%)	108	(29.8%)	264	(38.9%)
Good	64	(51.6%)	89	(36.3%)	67	(51.9%)	98	(42.6%)	56	(51.4%)	77	(37.7%)	187	(51.6%)	264	(38.9%)
Very good	12	(9.7%)	24	(9.8%)	16	(12.4%)	16	(7%)	7	(6.4%)	14	(6.9%)	35	(9.7%)	54	(8%)
Difficult to say	5	(4%)	8	(3.3%)	6	(4.7%)	10	(4.3%)	1	(0.9%)	8	(3.9%)	12	(3.3%)	26	(3.8%)
Refusal	0	(0%)	0	(0%)	0	(0%)	1	(0.4%)	0	(0%)	1	(0.5%)	0	(0%)	2	(0.3%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)
Overall satisfaction with inpatient care																
Very bad	1	(0.8%)	3	(1.2%)	1	(0.8%)	2	(0.9%)	3	(2.8%)[c]	4	(2%)	5	(1.4%)	9	(1.3%)
Bad	6	(4.8%)	19	(7.8%)	10	(7.8%)	30	(13%)	5	(4.6%)	29	(14.2%)	21	(5.8%)	78	(11.5%)
Acceptable	55	(44.4%)	124	(50.6%)	46	(35.7%)	84	(36.5%)	51	(46.8%)	85	(41.7%)	152	(42%)	293	(43.2%)
Good	52	(41.9%)	68	(27.8%)	59	(45.7%)	88	(38.3%)	42	(38.5%)	69	(33.8%)	153	(42.3%)	225	(33.1%)
Very good	10	(8.1%)	22	(9%)	10	(7.8%)	20	(8.7%)	4	(3.7%)	8	(3.9%)	24	(6.6%)	50	(7.4%)
Difficult to say	0	(0%)	7	(2.9%)	3	(2.3%)	5	(2.2%)	4	(3.7%)	8	(3.9%)	7	(2%)	20	(3%)
Refusal	0	(0%)	2	(0.8%)	0	(0%)	1	(0.4%)	0	(0%)	1	(0.5%)	0	(0%)	4	(0.6%)
Total (N)	124	(100%)	245	(100%)	129	(100%)	230	(100%)	109	(100%)	204	(100%)	362	(100%)	679	(100%)

Despite the low satisfaction levels, the ATT presented in Table 6.4 confirms the findings in Table 6.3 that maternal inpatient care users were more satisfied with treatment efficiency and the sanitary conditions at facilities. They were also more satisfied with access to diagnostic tests, qualifications of medical doctors and had a higher rate of overall satisfaction with inpatient care. No statistical difference between maternal care users and non-maternal-care users was found in terms of their satisfaction with the friendliness of inpatient care nurses and doctors.

6.4 DISCUSSION

We found that maternal inpatient care users are more likely to pay informally, pay a higher amount and are more often requested to pay informally than non-maternal care users, but they face fewer difficulties than non-maternal care users to cover the cost of diagnostic tests and medicines. Inpatient care satisfaction is low in both groups, but maternal care users are more satisfied overall, and more satisfied with treatment efficiency, sanitary conditions at facilities, access to diagnostic tests and qualifications of medical doctors.

Affordability

A number of studies have highlighted the presence of informal payments in healthcare in Ukraine and other Central and Eastern European countries. Our findings add to this body of knowledge by showing that these payments are more significant among maternal care users when compared to other groups. Birth is a natural life event that involves high health risks. In Ukraine, birth is highly medicalised, with an intensive participation of various healthcare providers during childbirth (e.g. gynaecologist, anaesthesiologist, midwife, surgical nurse). Given that health workers play a crucial role in maternal and new-born health outcomes and the fact that they are underpaid in Ukraine could help to explain the differences regarding informal payments between the maternal and non-maternal care users. Informal payments for childbirth are also being used as a mechanism to avoid unnecessary risks and receive a higher standard of care. In fact, it is an established procedure that the woman chooses the health worker who will assist with her birth and agrees on a payment amount in advance, according to the expected type of birth and anticipated health services. This is in contrast with the legal and regulatory situation in Ukraine that states that there should be no payments for (inpatient) maternal care, unless private facilities are being used.[9,20,21]

Table 6.4: Average treatment effect on treated (ATT) when compared the maternal care users (treated) to non-maternal care users (controls) in the years 2016, 2017, 2018 using Mahalanobis nearest neighbour matching technique

	Wave 1 (2016)				Wave 2 (2017)				Wave 3 (2018)				Total, all waves			
	N observ. N treat. N contr.	Coefficient	AI Robust Std. Error	P>|z|	N observ. N treat. N contr.	Coefficient	AI Robust Std. Error	P>|z|	N obser. N treat. N contr.	Coefficient	AI Robust Std. Error	P>|z|	N obser. N treat. N contr.	Coefficient	AI Robust Std. Error	P>|z|
How much did you pay into charitable funds? (in hryvnia) [a]	327 111 216	6.995	34.364	0.839	304 107 197	113.207	132.696	0.394	253 86 167	-165.670	620.769	0.790	884 304 580	-51.472	170.770	0.763
Were you requested to pay into charitable funds? (0=do not report request, 1=report request)	369 124 245	0.063	0.055	0.259	358 129 229	0.065	0.059	0.269	313 109 204	0.078	0.067	0.241	1040 362 678	0.064	0.035	0.068
How much did you pay at the cash desk? (in hryvnia) [a]	328 111 217	-50.681	148.382	0.733	299 108 191	-296.213	308.412	0.337	242 79 163	-360.228	584.576	0.538	869 298 571	-219.973	197.196	0.265
Did you pay informally? (0=No, 1=Yes)	369 124 245	0.082	0.059	0.162	358 129 229	0.119	0.059	0.044*	313 129 204	0.044	0.062	0.471	818 270 548	0.077	0.034	0.023*
How much did you pay informally? (in hryvnia) [a]	308 104 204	438.419	181.824	0.016*	276 90 186	710.959	262.903	0.007*	234 76 158	157.263	331.298	0.635	1040 362 678	461.023	161.197	0.004*
Were you requested to pay informally? (0=do not report request, 1=report request)	369 124 245	0.057	0.047	0.226	358 129 229	0.101	0.054	0.064	313 109 204	0.045	0.057	0.427	1040 362 678	0.065	0.030	0.034*
How much did you pay for medicines? (in hryvnia) [a]	269 74 195	-304.588	653.521	0.641	184 56 128	-42.829	374.65	0.909	141 28 113	-931.554	907.736	0.305	594 158 436	-417.581	382.312	0.275
Was it difficult to cover the costs for medicines? (1=impossible - 4=no expenditures) [b]	338 108 230	0.159	0.086	0.064	318 115 203	0.014	0.105	0.898	289 99 190	0.058	0.134	0.664	945 322 623	0.075	0.062	0.226
Was it difficult to cover the costs for diagnostics? (1=impossible - 4=no expenditures) [b]	335 108 227	0.389	0.110	0.000*	328 116 212	0.287	0.080	0.000*	294 97 197	0.331	0.104	0.001*	957 32 636	0.341	0.058	0.000*
How much money did you need to borrow to cover all expenses? (in hryvnia) [a]	294 95 199	-787.38	854.77	0.357	192 60 132	-1584.845	593.521	0.008*	184 50 134	-772.185	1161.86	0.506	670 205 465	-1095.243	591.506	0.064
How do you rate sanitary conditions? (1=very bad - 5=very good) [c]	367 123 244	0.228	0.103	0.027*	356 128 228	0.202	0.109	0.062	311 109 202	0.496	0.127	0.000*	1034 360 674	0.320	0.065	0.000*
How do you rate access to diagnostic tests? (1=very bad - 5=very good) [c]	356 118 238	0.226	0.107	0.034*	343 123 220	0.175	0.102	0.089	301 104 197	0.053	0.109	0.629	1000 345 655	0.166	0.062	0.008*
How do you rate doctor qualification? (1=very bad - 5=very good) [c]	360 122 238	0.253	0.096	0.008*	349 127 222	0.256	0.106	0.016*	304 106 198	0.079	0.127	0.537	1013 355 658	0.212	0.064	0.001*

	Wave 1 (2016)				Wave 2 (2017)				Wave 3 (2018)				Total, all waves			
	N observ. N treat. N contr.	Coefficient	Al Robust Std. Error	P>|z|	N observ. N treat. N contr.	Coefficient	Al Robust Std. Error	P>|z|	N obser. N treat. N contr.	Coefficient	Al Robust Std. Error	P>|z|	N obser. N treat. N contr.	Coefficient	Al Robust Std. Error	P>|z|
How do you rate friendliness of doctors? (1=very bad - 5=very good) [c]	366 123 243	0.150	0.098	0.124	353 127 226	0.108	0.114	0.343	311 108 203	0.008	0.131	0.951	1030 358 672	0.100	0.067	0.134
How do you rate friendliness of nurses? (1=very bad - 5=very good) [c]	363 123 240	0.145	0.097	0.137	352 127 225	0.091	0.110	0.408	310 108 202	-0.064	0.134	0.633	1025 358 667	0.067	0.067	0.316
How do you rate treatment efficiency? (1=very bad - 5=very good) [c]	356 119 237	0.217	0.094	0.021*	341 123 218	0.292	0.100	0.004*	303 108 195	0.186	0.100	0.064	1000 350 650	0.233	0.057	0.000*
How do you rate your overall satisfaction with inpatient care? (1=very bad - 5=very good) [c]	360 124 236	0.143	0.092	0.121	349 126 223	0.089	0.106	0.402	300 105 195	0.137	0.109	0.209	1009 355 654	0.119	0.059	0.043*

* indication of significance, p<0.05

[a] Ukrainian hryvnia, 1 hryvnia = 0.033 Euro, exchange rate on 31th March 2020.

[b] coding: 1=impossible, 2=difficult, 3=not difficult, 4=no expenditures

[c] coding 1=very bad, 2=bad, 3=average, 4=good, 5=very good

At the same time our findings indicate that maternal care users had fewer difficulties than non-maternal care users to cover the cost of diagnostic tests and medicines for which non-maternal care users often needed to borrow money. This could be explained by the characteristics of the use of care. The affordability of care among maternal care patients could be affected by the anticipated nature of the event of a birth, which allows one to prepare for it. It could also be explained by the fact that, due to the nature of maternal care services (at least for cases without pathology), maternal inpatient care patients are probably receiving fewer diagnostic tests and medicines for pregnancy and childbirth when compared to other inpatient admissions, for instance those related to oncology or cardiovascular disease.

A study suggested that, to deal with informal payments in maternity hospitals in Kiev, it is necessary to regulate informal practices through improved governance in the healthcare sector and to improve professional ethics through staff training, which could improve adequate access to facilities.[21] These suggestions are still valid today and in fact are planned to be addressed in the coming years by health system reforms.

Appropriateness

Our findings suggest that maternal inpatient care users were not only overall more satisfied with the care they received when compared to non-maternal inpatient care users, but also more satisfied with treatment efficiency, sanitary conditions at facilities, access to diagnostic tests and qualifications of medical doctors. Satisfaction with health services is also based on the expectations of patients. Even though maternal care users are more satisfied with the care they receive when compared to non-maternal care users, it does not mean the overall practice is good or appropriate. Childbirth services in Ukraine have been described as being not oriented towards users, and the communication skills of most medical personnel do not meet the requirements of patient-oriented care.[21] Another study found that Ukrainians are generally much more dissatisfied with their health system when compared to Moldova or Belarus.[137] The reason why maternal care patients in our study are more satisfied with the quality of care and sanitary conditions at facilities might be linked to the fact that maternal care facilities are more often of a higher standard, better equipped and more recently renovated than other units at hospitals in Ukraine. Different experiences might also partly be due to the willingness of women to provide informal payments. This could result in competition between providers to attract maternal care patients who can pay more. Previous studies have found that paying for adequate care in Ukrainian hospitals is common practice, especially among maternal care patients. Obtaining better services through informal payments is more common in a context where clear financial arrangements are lacking and where there is uncertainty about the quality of care received.[21,138] There have been a number of projects, such as the "Ukrainian-Swiss Mother and Child Health Program, 2011- 2015" and the "Ukraine Maternal and Infant project" by USAID, which have contributed to improving the quality of maternal care provision and the conditions at maternity wards

[139,140]. The MMR has decreased in Ukraine in recent years and some inpatient care guidelines have been adopted. However, it is not sure which protocols are being used by medical doctors in Ukraine; since a decree of the Ministry of Health that came into force on 28 April 2017, allowed healthcare providers to use international protocols. While the decree aimed to improve the quality of guidelines, as well as to address biased or absent guidelines, the quality of care is planned to be further improved in the coming years by introducing better quality indicators and by monitoring care provision.[141]

Strengths and limitations

The findings of our study need to be seen in the context of its strengths and limitations. The chosen data collection method was well established and the total survey sample size was large. Another strength was the data analysis method employing matching technique, which allowed us to compare the two groups by treating them as cases and controls. Yet, it is important to recognise that the generalisability of our findings to all women receiving inpatient maternal care in Ukraine and the statistical strength of our findings are limited due to the relatively small size of the sub-sample relevant for our analysis. This, to some extent, was mitigated by pooling the data from three survey years. Eligible maternal care users were not only those who were giving birth, but also those who were hospitalised for other maternal care reasons, which we were unable to identify. Similarly, there were also a variety of reasons for admissions of non-maternal care users.

6.5. CONCLUSIONS

This Chapter investigated users' experiences with the affordability and appropriateness of inpatient maternal care in Ukraine by comparing this group of users with inpatients who used non-maternal care. The study found that inpatient care users, especially those who did not use maternal care, faced difficulties in covering the costs for diagnostic tests and medicines, for which they often needed to borrow money. Maternal inpatient care users paid more often and higher amounts informally, and were more often asked to make such payments than non-maternal care users. While inpatient care satisfaction appears to be rather low in both groups, maternal care users were more satisfied overall, but also specifically with treatment efficiency, sanitary conditions at facilities, access to diagnostic tests and qualifications of medical doctors.

Our findings provide important new empirical information to inform maternal care stakeholders in Ukraine in the context of ongoing health reforms. They highlight the need for a range of measures to improve quality and affordability of inpatient maternal care. This involves addressing informalities in receiving maternal care, reducing the financial burden on women during the maternal period as well as improving quality of care through the introduction of quality indicators and the monitoring of care provision.

7

General Discussion

7.1. INTRODUCTION

This dissertation contributes to our knowledge on maternal care in Eastern Europe. Maternal health outcomes in this part of Europe are poorer compared to those in Western Europe. An important factor for good maternal health outcomes is ensuring access to adequate maternal care for all women, which is the focus of this dissertation.[142] As outlined in Chapter 1, the motivation for this topic is the importance to obtain knowledge on and insight into the different aspects of access to adequate maternal care in Eastern Europe and to address the need for more evidence to support policies that intend to achieve better maternal health outcomes.

Specifically, the dissertation aims to increase our understanding of access to adequate maternal care in Eastern Europe in terms of the availability, affordability, appropriateness, approachability and acceptability of maternal care. To achieve this aim, Chapter 2 has reviewed the evidence in the published literature on this topic in Eastern Europe. Chapters 3, 4 and 5 have studied and compared the five aspects of access to maternal care based on the insights of mothers, decision makers and maternal care providers in several Eastern European countries where the MMR is relatively high, namely Bulgaria, Georgia, Latvia, Moldova and Romania. Furthermore, in Chapter 6, we have studied the affordability and appropriateness of inpatient maternal care in Ukraine by comparing inpatient maternal care users to inpatient non-maternal care users.

The broad range of evidence provided in this dissertation can facilitate evidence-informed decision-making in the area of maternal care in Eastern Europe. This final Chapter outlines and discusses key findings from the perspectives of policy and research. The Chapter ends with concluding remarks on how to improve access to adequate maternal care in Eastern Europe.

7.2. MAIN CONCLUSIONS

The key findings of this dissertation are presented in the form of six statements based on the main results. Each statement is accompanied by recommendations for policy and suggestions for further research.

Statement 1: The urbanisation of maternal care provision results in disparities in access to adequate maternal care within and between Eastern-European countries.

Among the major determinants of poor maternal health outcomes are economic and physical barriers to access to quality care. Health outcomes in urban settings are better than those in rural areas not only due to the physical proximity of healthcare facilities,

but also because specialised care is centred in urban areas. Nevertheless, there are also other factors at play, such as the poorer economic situation, lower levels of education, and poorer living conditions in rural areas.[143]

Eastern Europe is facing a depopulation crisis**.** Birth rates have sharply dropped in the 1990s during the post-Soviet era of political and economic upheaval. According to the UN's statistics, over the next 10 years Latvia, Lithuania, Bulgaria, Ukraine, Serbia, Croatia, Bosnia and Herzegovina and Romania are among the top 10 countries in the world with the most rapidly declining population, with rest of the region not far behind. Low fertility, emigration, and an ageing population create strains on healthcare, social support systems and infrastructure, while restricting the competitiveness and longevity of the labour market. Furthermore, the share of the urban population in Europe has increased continuously between. The EU's level of urbanisation is expected to increase to approximately 83.7% in 2050.[144] However, statistics in 2020 show that particularly in Eastern Europe when compared to its Western counterparts, a smaller share of the population lives in urban areas (54.2% in Moldova and 68.3% in Latvia, as compared to 92.2% in the Netherlands).[145] Overall, maternal care is concentrated in urban areas. It has always been more accessible in urban settings, but geographical imbalances have increased due to the trend of young people moving to cities for better employment opportunities and the related declining birth rates, especially in rural settings. The resulting brain drain combined with policies to concentrate care in fewer facilities pose challenges of having care providers in rural areas, which affects adequate maternal care provision.

Even high-income countries like Canada or United States are struggling with urban-rural disparities. In particular, Eastern European countries face geographical disparities due to a lack of physicians in rural areas. While maternal care in these countries is mostly provided by gynaecologists-obstetricians, remote and rural areas find it particularly difficult to recruit and retain obstetricians. The lack of obstetricians and other types of health workers (e.g. midwives) and the related lower number of performed services in rural areas, combined with lacking motivation and training, result in questionable quality of care in the rural regions. Even though basic maternal care services are usually ensured in less populated areas of Eastern European countries, the maternal services in rural areas often do not meet women's needs or expectations (see Chapters 2 to 4, results on availability and appropriateness).

Furthermore, geographical disparities pose a barrier to access to adequate maternal care in Eastern Europe due to travel costs and the extra time women living in rural areas spend to access the care they need. Physical access and reaching the healthcare facilities depends on travel distance, time spent on travelling, means of public transport and its schedule. The degree of poverty also plays an important role when healthcare

consumers face travel costs to reach the necessary care in urban areas. The rural population is often financially disadvantaged due to limited employment opportunities in close proximity, especially in Eastern European countries.[143] Access to adequate maternal care might be especially limited for those women in rural areas who are relying on public transport, as it can have irregular time schedules and travel can be costly and time consuming. Thus, physical distance to receive the necessary care disincentivizes care-seeking behaviours of pregnant women.[146] The services of the obstetrician can also be subject to OOP payments, depending on whether the provider is practicing in the public or private system, whether there are informal payments and how well women are covered for maternal care services in the publicly financed health system. Moreover, not everyone can afford the maternal care in urban settings, especially if the care is provided in the private sector. Thus, the concentration of maternal care providers in urban areas has a negative effect on access to adequate maternal care services.The healthcare infrastructure creates additional geographical disparities in Eastern European countries due to the lack of facilities in rural areas. The concentration of maternal care facilities in urban areas and the influence of this feature of maternal care on geographical access was analysed in Chapters 2 to 5 of the dissertation. Our findings confirmed that geographical access to necessary maternal care services can be challenging in Eastern European countries because most of the facilities are concentrated in the capital and other bigger cities and because maternal care provision is fragmented. This is especially problematic for women living in remote rural areas. This group of women frequently needs to travel further for more advanced and better-quality care, which takes more time and requires additional financial resources.

However, in some Eastern European countries, care urbanisation is a more important problem than in other countries. It is especially challenging for those countries that have many remote areas (e.g. mountainous regions, underdeveloped rural areas geographically far from bigger cities), low population density and poor infrastructure, such as poor roads and irregular public transportation. For instance, Latvia and Georgia are similar in terms of geographical size, but Georgia has nearly 2 times the population of Latvia (3.7 million vs. 1.9 million). However, despite the higher population density, physical distance to healthcare facilities was found to be a much larger problem in Georgia than in Latvia. This can be attributed to a lower level of urbanisation, poorer infrastructure and difficulties to reach patients in the mountainous areas in Georgia, coupled with financial constraints in those areas (see Chapters 3 and 4). Besides, seeking maternal care in urban areas does not necessarily ensure adequate care provision. As Chapters 2 to 5 have shown, generally, there are significant disparities in the quality of maternal care provided by the different facilities and providers.

The urbanisation of care in Eastern European countries and the concentration of tertiary and secondary level maternal care facilities in the capital and other bigger cities are

inherited from the former health systems based on the Semashko model of care.[147,148] For example, during the late 1980s, women's consultation centres provided antenatal care to pregnant women on an outpatient basis. However, these centres were concentrated in the urban areas and carried out outreach programs into the communities using ambulatory facilities. Moreover, childbirth services provided by the State maternal houses were also concentrated in urban settings.[148-150] After the fall of the communist regimes, healthcare reforms in Eastern European countries led to the deregulation and liberalisation of the healthcare market. However, the distribution of inpatient medical facilities was largely maintained. Even though reforms have occurred at a different pace and have taken different forms in Eastern European countries, some common trends and features exist. Many maternal care providers with a good reputation work in the private sector and also establish their practices in the capital or in other urban areas. The former systems of care in Eastern European, but also in many Western European countries, have traditionally been 'physician directed' rather than 'patient centred', with the result that no attempts are made to seek the opinions of women or their families regarding their care.[148]As stated in Chapters 2 to 5, pregnant women from rural and urban areas carefully select their maternal care provider themselves to avoid negative experiences and receive more adequate care. However, utilisation of the desired (private) maternal care services in the capital or in the big cities entails direct and indirect costs, which increase the financial burden on pregnant women (particularly those living in rural areas), compromise financial access and increase inequity.

Suggestions for policy and further research:

As explored by this dissertation, the concentration of maternal care facilities in urban areas has a negative effect on access to adequate maternal care services in Eastern Europe. Policy solutions to increase mothers' physical and financial access to necessary care in rural areas and to ensure a more unified quality of maternal care provision are required in order to overcome the challenges unique to the growing phenomenon of urbanisation. Such solutions should be country-specific, given the cross-country differences, but overall they could include financial protection of direct and indirect costs for maternal care among low income women in rural areas and an increased availability of adequate maternal care provision in rural areas. A future study on good practices could also explore how countries in Europe ensure adequate maternal care provision in more remote areas. Although practices cannot be directly transferred from one country to another, the analysis of good practices abroad could be an essential starting point for reducing the rural-urban disparities in maternal care in Eastern Europe. Future research could also address the lack of data and evidence on differences in MMR and child mortality between rural and urban areas in Eastern Europe.

Statement 2: Informalities are a response to the presence of barriers to access to adequate maternal care.

We observe informalities involved in maternal care provision in Eastern Europe, which include the use of informal cash payments, gratitude gifts and personal connections. In the context of health system failures, informal practices provide means for patients in Eastern European countries to obtain services with quicker access and perceived better quality, as well as to healthcare providers to obtain extra income, which is often excused by their low salaries. The empirical analysis in Chapters 2-6 of this dissertation confirms the existence of widespread informal practices in Eastern European countries.

Informal practices in healthcare are a complex phenomenon and a response to poorly governed and underfunded healthcare systems, which is also a matter of government priorities.[138] Governance is defined as the structures and processes by which the health system is regulated, directed and controlled.[151] The informalities are a response to the presence of barriers to access to adequate maternal care, which is also the case in other parts of the health system and in society as a whole.[152] Multiple tools, such as informal cash payments, gifts, and the use of personal connections, are simultaneously applied by service users to secure access to adequate maternal care services and to avoid negative experiences. Women employ the different forms of informalities as coping strategies to deal with "incompetent" physicians who, in the absence of an effective monitoring and control mechanism, are in a position to provide substandard care in the absence of informal payments.[138,152]

While the presence of gratitude gifts in maternal care in Eastern European countries is a common practice explained by the tradition of giving gifts, it can create barriers to access adequate care. Gifts are sometimes sizable and cannot always be seen as a token of gratitude. Gift-giving and donations in healthcare in Eastern European countries are often forced or expected by service providers.[21] This becomes a problem when the gifts and donations are not provided as a symbolic token of gratitude after the service is provided, but are expected to be high in value, provided during or before the provision of services and used as tools to receive better care and attention from providers. This also foregoes the principle of equity, as not all women are able to provide informal contributions or have personal connections. Moreover, relying on individual-level patient-physician arrangements can jeopardize future healthcare reforms aimed at improving access and the more efficient use of resources.[138]

The literature shows that informal cash payments are distributed among healthcare staff and not reinvested in services.[153] Thus, they do not compensate for the underinvestment in health facilities and equipment. However, these payments are frequently tolerated because they increase the income of healthcare staff and motivate them to remain

in practice. The issue of low salaries, as well as the absence of financial instruments to motivate physicians to improve their performance or to sanction misbehaviour, introduce more ambiguity in the role of the medical doctors in the healthcare sector. Such a practice also affects the patients' trust in both medical professionals and the state. Despite the negative effects of such coping strategies, they are often seen as a way to survive in difficult circumstances.[138]

It is important to note that informal payments are only part of the coping strategies applied, and there are other layers linked to personal connections and networks [138]. The use of personal connections to secure access to adequate maternal care was observed in all the countries studied. Chapters 2, 4 and 5 also reveal that one motivation behind paying informally and using personal connections is to secure quicker access, better attention or better-quality maternal care services. Although these informal practices may help individual patients to obtain the desired services, there is no evidence that they significantly contribute to the improvement of clinical quality in the healthcare sector in general.[153]

Informalities in maternal care undermine the principle of universal healthcare and the public's trust in maternal care providers. The informal practices also cause problems related to efficiency and equity. The efficiency of the healthcare system is reduced if healthcare providers pay greater attention and offer excess and unnecessary care to those who pay them extra or use personal connections to receive the care, thereby contributing even more to the inefficiencies in the system. Similarly, equity is reduced when informal practices allow women with better connections and/or high-income to secure better and faster services, and cause women without connections and/or low-income women to forgo or delay seeking maternal care, sell assets to seek care, or lose trust in the health system.[13,21,138]

The interwoven practices of informalities have been flourishing in Eastern European countries, with some states condoning informalities, and strong monitoring and control systems lacking.[138,153] We observed that some countries in Eastern Europe have managed to limit or eliminate informal cash payments (e.g. Latvia, Georgia, Bulgaria), while others still have a conducive environment for informal cash payments. This difference can partly be explained by the growth of the private healthcare sector, which provides alternatives to the public sector and, to a certain extent, lowers the need for informal payments, since women can seek better services in the private sector.[5,30] Furthermore, our findings in Chapters 3 and 4 also indicate that women in Georgia and Latvia who use services in the public sector do not seem to provide informal cash payments, which points to a change in society's attitude towards such payments. However, women in these countries still use personal connections and provide gratitude gifts (most often after childbirth), which shows that informalities in maternal care provision are still prevalent. Nevertheless, we

observe that in Moldova, Romania and Ukraine, the use of gratitude gifts and personal connections are accompanied with cash payments that often are requested or are at least expected.

Suggestions for policy and further research:

As explored in this dissertation, the informal practices involved in maternal care provision in Eastern Europe have a negative effect on efficiency and equity in maternal care. Informalities are a societal problem, they become widespread and deeply rooted in the absence of adequate policy interventions. Such interventions are most probably not taken because the state is weak or because it serves specific interests. In addition to economic and socio–cultural measures, elimination of informal payments in maternal care requires governance measures, such as zero tolerance policies and punishment.[154] Moreover, suitable regulations coupled with incentives (e.g. improved working conditions and salaries, ensured quality standards of services) may help to decrease the need for informalities in maternal care provision.[153] Regarding further research, a complex approach in studying informal practices as coping strategies to receive adequate maternal care in Eastern Europe is necessary for a more comprehensive mapping of the bottlenecks of the system.[138]

Statement 3: Out-of-pocket payments are burdensome in some Eastern European countries and limit access to adequate maternal care.

Affordability of services is a key barrier to accessing maternal care in Eastern European countries. In case of high OOP payments, maternal services become unaffordable for women, causing care interruption or delay.[77] OOP payments and their association with a financial burden when seeking maternal care are analysed in Chapters 2-6. Our findings indicate that OOP payments pose a burden for pregnant women in Bulgaria, Georgia, Moldova, Romania and Ukraine.

Even though in many Eastern European countries basic maternal care services are formally free of charge, formal OOP payments are required for extra services such as additional check-ups, a private childbirth room, C-section, anaesthetics during birth and certain blood tests. In addition, insufficient healthcare sector funding limits the resources available for adequate care provision. The health sectors in Eastern European countries have been allocated a smaller share of GDP and spent less per inhabitant than in Western Europe [155]. The rapid transformation of the "Semashko" tax-based financing into financing through health insurance or taxation and OOP payments was accompanied by lowering access, affordability and utilisation of healthcare services. Our findings in Chapters 5 and 6 indicate that the highest financial burden was reported by women in Romania and Ukraine when compared to Bulgaria and Moldova. Experiencing complications and having C-section was associated with a financial burden. Furthermore, in Ukraine

maternal care users had difficulties covering the costs of medicines and diagnostic tests for which they often needed to borrow money. As discussed in Chapters 3 and 4 of this dissertation, women utilize maternal care services in bigger cities, which increases indirect and direct healthcare cost. Consequently, this has a negative influence on access to adequate maternal care services.

The OOP contributions can be related to underfunded maternal care systems, inefficient use of the resources or a combination of both. Consequently, there is a need for women's contributions to keep the system sustainable and services available, which creates care affordability problems in return. Evidence from Ukraine shows that even though the country's spending on reproductive health is higher than that of other countries at a similar level of economic development, the allocation of available resources is inefficient, which is evident (especially in rural areas) from the poorly functioning telephone lines in medical centres, lack of pharmaceuticals and consumables and outdated equipment.[21]

It is worth mentioning that official payments can co-exist with informal patient payments to healthcare providers, as well as involuntary donations at healthcare facilities and supplies that patients have to bring to the facility themselves (e.g. medicines, bedsheets). When clear regulation of the basic care package and formal patient charges is lacking, patients experience a mixture of financial obligations.[30] The presence of informal payments is mostly found in the public care sector. This further increases the maternal care affordability problem.[20,21,30,154]

Until the 1990s, market regulatory mechanisms such as negotiable prices and competition were not applied in Eastern European countries due to the existing socio-political arrangements. Thus, the low public healthcare funding in post-Soviet republics (in the absence of private spending) led to insufficient healthcare resources, inequalities in access to public services and a variety of informal practices.[153] Informal payments are more widespread and higher when requested by healthcare providers.[156] Moreover, requested informal payments can be seen as an indicator of major financial troubles as well as fraud and corruption in the healthcare system, while patient-initiated informal payments can be seen as an approach to meet patient expectations of appropriate service quality.[152] Furthermore, the probability and the size of formal and informal payments is to a great extent determined by the type of service consumed.[157,158] Chapter 6 on maternal care in Ukraine confirms this by showing that inpatient maternal care service users paid significantly more often and higher amounts informally when compared to other inpatient care users. However, we found that the average amount of money maternal in-patient care users paid was about 694 UAH (22.8 Euro), which was much less than the 263 Euro found in a previous study in 2013 on informal payments in maternity hospitals in Ukraine.[21]

Privatisation of the maternal care sector, as evident in the recent reforms in Georgia, also contributes to the affordability problems.[159] In Georgia, much of the antenatal care is now based in private and public outpatient care facilities where costs of the services need to be covered by the individual patients' OOP payments or by voluntary insurance premiums.[5,27,33,45,47,49] However, there are differences between the Eastern European countries regarding the degree of maternal care provision in the private sector. For example, in Bulgaria, Georgia, Latvia and Romania, the private care sector is much more developed and, thus, maternal care use in the private sector in those countries is more common when compared to that in Ukraine and Moldova.[5,27,33,45,47,49] It should be noted that in Bulgaria for instance, the private healthcare sector has considerably grown during the last decades, which provides alternatives to the public healthcare services. This can explain to a certain extent the lower share of informal patient payments in Bulgaria, as Bulgarian patients have the possibility to opt for private services and avoid informal payments in the public sector.[30]

Suggestions for policy and further research:

In terms of policies, governing bodies should regulate prices and ensure the quality of services in both, private and public, maternal care sectors. Additionally, policies that protect vulnerable population groups by exempting them from (co-)payments should also be put in place to reduce the financial burden of accessing adequate maternal care. Further research on the factors affecting the presence of OOP payments in maternal care should be undertaken to provide more evidence and explore the robustness of our results. The analysis could include other Eastern European countries as well as indicators on socio-economic and cultural factors. The presence of the private care sector, healthcare funding and the use of resources might play a crucial role in OOP payment policy. Hence, a study based on primary data might provide more insight into the context of the financial burden related to receiving maternal care services.

Statement 4: Securing maternal care by a provider with adequate attitude, knowledge and skills can be challenging in Eastern European countries.

How adequate maternal care providers' attitude, knowledge and skills are, is analysed in Chapters 2-5 of this dissertation. To secure attention, knowledge and skills of maternal care providers, women in Eastern European countries are willing to pay OOP payments and use personal connections.[160-162]

There are two main push-factors that can lead to a careful selection of maternal care providers in Eastern Europe: the need for twenty-four-hour access to reliable information and the need for psychological comfort during childbirth. Thus, the desire to receive reliable information, better attention and responsiveness to feelings of anxiety can be seen as a strategy to avoid the perceived substandard care.[21] As shown by previous

research, women in Serbia believe that formal social protection does not ensure adequate providers' attitude, knowledge and skills in maternity wards. They report poor bedside manners, derogative communication and lack of compassion by maternal care providers. These women reported to have often been addressed by a protocol number instead of their actual names and have not been informed about the medical procedures they have to undergo.[22] These findings are supported by this dissertation as well.

When clear standards in healthcare provision are lacking or are not monitored, service quality can be artificially lowered by physicians to induce informal payments.[163] Hence, substandard care appears in the context of providers misusing their market position, as well as government's failure to ensure the necessary financial and regulatory framework for health care provision.[21] In Georgia, for instance, the implementation of national guidelines and protocols for the management of maternal care is not monitored. Evidence shows that healthcare providers in Georgia do not always treat mothers based on the best available evidence.[164] This problem was also found to be prevalent in Chapter 3 of this dissertation, where it was indicated that the available medical guidelines have only a guiding nature and providers are not obliged to apply them in their daily practice. In addition, standards of education and knowledge of evidence-based medicine are found to be lower in Eastern Europe and little attention is paid to the development of social and communication skills of medical doctors, which results in poorly trained physicians.

Discrepancies in maternal care provision in Eastern Europe were inherited from the communist period.[165] Salaries of healthcare providers were low and accessibility and affordability of good quality care were limited. However, in countries like Bulgaria, Georgia and Latvia, the privatisation and deregulation of the healthcare sector made healthcare providers manipulate user fees and their remuneration. Yet, securing adequate services can be challenging, as not everyone can afford to pay or have such personal connections. Furthermore, evidence also shows that paying and using personal connections do not necessarily improve care satisfaction or quality of care, in particular when highly trained health workers are providing evidence-based medicine. A study in Hungary shows that women are ready to accept higher prices for healthcare services provided with better quality and access. Informal payments help some women to secure services, which they perceive to be of better quality. Besides the low salaries of maternal care providers discussed in previous statements, also the provider-induced substandard quality of care provision explains the existence of informal payments and makes their eradication more challenging.[78,163]

Women most often use the payments and connections because they fear poor experiences.

The reputation of providers is also of high importance to the women in their efforts to secure more safety, responsiveness and personal comfort, as more reliable information on service quality is generally absent in CEE countries.[166] Thus, due to the prevalence of perceived sub-standard quality of maternal care services in Eastern Europe, pregnant women try to utilize maternal care services by the provider who is most popular.[166] The above-mentioned study in Hungary also found that provider reputation and attitude is rated more important compared to other attributes of health care services.[78] Women usually search for an adequate provider beforehand, have limited information about providers and rely on the experiences of others when selecting a provider.[21]

Suggestions for policy and further research:

As indicated above, quality and continuity of maternal care services is compromised in Eastern Europe. There is a need for better compliance with standards and protocols, improvements in medical education and for making maternal care guidelines mandatory.

More research should be done on the adequacy of maternal care offered in the region. It is also advisable to conduct a cross-country study on maternal care quality and health system reforms in postcommunist countries. Since women attach a higher value to the reputation and attitude of the maternal care provider, priority should be given to investments in human resources in terms of training, medical education reform.

Statement 5: The low rates of antenatal and postnatal care visits and high rates of C-sections raise questions about the adequacy of maternal care provision in Eastern European countries.

C-section is a common procedure that can save women's and babies' lives when complications occur during pregnancy or birth. However, C-sections for non-medically indicated reasons is a cause for concern, because the procedure is associated with considerable short-term and long-term health effects and unnecessarily increased health-care costs. C-sections have increased world-wide over the past 30 years and there is no sign of slowing down, while there are also no significant maternal or perinatal benefits from this increasing rate.[167-169] However, there is still a debate on what an optimal C-section rate is. Although the WHO indicates that a 10–15% C-section rate is necessary, a recent study found that 19% could be also adequate.[170,171]

C-section rates vary considerably among the countries in Europe, with an average of 22.5% in 2014 for the WHO European Region.[171] Within the EU, rates in 2017 ranged from 16.5% in Finland to 54.8% in Cyprus. In some Eastern European countries like

Romania (44.1% in 2017), Georgia (43.2% in 2016) and Bulgaria (43.1% in 2017), the C-section rates were double the WHO European region average and almost triple the WHO recommended rate, which raises questions about the adequacy of maternal care provision in these countries.[172] Chapter 5 of this dissertation confirms the existence of extremely high C-section rates in some Eastern European countries. In this study, 61% of participating women in Romania and 53% in Bulgaria reported giving C-section.

The high C-section rates can mainly be attributed to the increase in elective C-sections, for which there are three main driving factors: financial (e.g. incentives), legal (e.g. malpractice liability concerns) and technical (e.g. availability and training of midwives and nurses). There is evidence that private hospitals tend to perform more C-sections than public hospitals.[173,174] Furthermore, differences also exist due to diverging preferences among women for a C-section across countries, which can be linked to the institutional arrangements of the maternal health system and cultural attitudes towards labour and birth. Preference for a C-section is also linked to psychological reasons, including fear of uncontrollable pain and physical damage, but it can also be attributed to improper information on the benefits and risks of a C-section.[175] C-sections can also be attributed to women's position in society, their perceived role and gender inequality. Overall, C-sections result in an inefficient use of scarce resources that could be more efficiently used on other forms of care, including improved provision of antenatal and postnatal care, as discussed below.

In addition to the high C-section rates, another inadequacy of maternal care provision in Eastern Europe was reported in this dissertation, namely low rates of antenatal and postnatal care visits. Antenatal care is a major public health intervention aimed at ensuring safe pregnancy outcomes. Specifically, studies demonstrate that ANC attendance may protect against neonatal mortality and countries with low ANC attendance have a higher MMR.[176] As mentioned several times in this thesis, the WHO recommends a minimum of 8 antenatal care visits to reduce poor health outcomes during the maternal period.[177] Women and new-borns also require support and careful monitoring after birth (postnatal care). Most maternal and infant deaths occur in the first six weeks after the birth, yet postnatal care remains the most neglected phase in the provision of quality maternal and new-born care.[178] The WHO recommends at least 4 postnatal care visits for the mother and baby within the first six weeks after birth.[179] Postnatal care was found to be the least measured area of the maternal period. This finding underlines existing concerns about the limited monitoring of the quality of postnatal care.[86]

Even though Europe is the most equal of all regions in terms of ANC and postnatal care use, differences between countries and the number of visits received exist.[180] Global, regional and comparable country data are only available for the previous WHO recommendation of four ANC visits. However, the data show that in some Eastern European countries

even this recommendation was not met.[176] Particular groups of women have a higher risk of adverse outcomes of pregnancy and birth, including: adolescents, migrants, Roma and women with low socio-economic status or level of education. These groups often do not seek or do not receive sufficient ANC and postnatal care, which is an important factor for reducing the MMR.[181] Chapters 4 and 5 of this dissertation confirm that women from the above-mentioned groups receive too few antenatal and postnatal care visits. The Chapters also outline a variation in antenatal and postnatal care use across the different Eastern European countries studied. In Moldova, 61.5% of women had fewer than 7 antenatal visits, while in Romania this percentage stood at 32.5%, in Bulgaria at 16.4% and in Latvia at 13%. Furthermore, about 7% to 18.7% of women in these four countries reported not having received any postnatal care. The variation in the rates across the different countries and the insufficient antenatal and postnatal care use can be linked to all five access-related barriers explored in the five Chapters of this dissertation, as well as in the discussion of the previous four statements.

The availability barrier to accessing antenatal and postnatal care can be linked to geographical disparities and the related healthcare infrastructure that pose a barrier to access adequate maternal care (e.g. lack of maternal care availability in rural areas). An additional barrier to receiving care can be attributed to the rural population often being financially disadvantaged and relying on (irregular schedules of) public transport, which can be costly and time consuming.[146] The affordability barrier to seeking antenatal and postnatal care services can be further linked to formal and informal co-payments. In case of high OOP payments, the services become unaffordable for women, causing care interruption or delay.[77] In Georgia, for example, the state provides only four free-of-charge ANC visits.[31] Postpartum care in Georgia is largely non-existent and it is also not included in the state-funded programs.[182] Also, adequacy of care and approachability can affect ANC and postnatal care-seeking behaviour. These two barriers are linked to receiving substandard care and poor attitudes and communication from their maternal care providers. Statements 2 and 4 explained that, in order to secure adequate provider attitudes and care provision, women in Eastern European countries are ready to pay (informal) OOP payments and use personal connections.[160-162]

These coping strategies are used to access care faster and to deal with "incompetent" and inattentive physicians who, in the absence of an effective monitoring and control mechanism, are in the position to provide substandard care and derogative attitude to induce the informalities.[138,152] Consequently, such informal practices can cause women without connection and/or low-income to forgo or delay seeking ANC and postnatal care.[21,30,138] Even though this dissertation found care acceptability to be a less prevalent barrier among women in Eastern Europe, other research shows that particular groups of women (e.g. migrants, Roma and women with lower levels of education) tend to receive fewer ANC and postnatal care visits.[181] Acceptability of care is an important factor that will

determine whether women will seek the ANC and postnatal care services. The evidence in this statement outlines that in some Eastern European countries C-section rates are too high, while the provision of antenatal and postnatal care is too low. This points to inadequacies and inefficiencies in maternal care provision, posing barriers to accessing adequate care related to all five access-related barriers explored in this dissertation.

Suggestions for policy and further research:

Since all five access-related barriers explored in this dissertation are affecting the low rates of antenatal and postnatal care visits and the high rates of C-sections, intervening on the policy level alone is not sufficient to overcome these problems. Given the increase in the C-section rates and the socio-cultural factors that motivate this increase, it seems unlikely that the rising C-section trend can be reversed easily.[183] Evidence shows that, in order to reduce unnecessary C-sections, public and private hospitals and providers need to be reimbursed equally for C-section and vaginal births.[183,184] However, this could result in a risk of performing too few C-sections. In addition, the literature suggests that women should be informed properly on the benefits and risks of a C-section.[183] With regards to antenatal and postnatal care, there is a need for more information and knowledge on the benefits of these services among women as well as on the availability of the care services that women are entitled to. The use of these services should be further promoted through (financial) incentives, such as sufficient coverage of care and the related indirect costs upon a timely initiation of care. To further encourage sufficient and timely use of antenatal and postnatal care, research should investigate how to further improve the skills and attitudes of maternal care providers in Eastern Europe, as discussed above. Further research should also explore additional mechanisms for provider reimbursement that would help in reducing the increasing C-section rates in Eastern Europe.

7.3. CONCLUDING REMARKS

This dissertation has presented evidence on the barriers to accessing adequate maternal care in Eastern Europe in terms of availability, affordability, appropriateness, approachability and acceptability. To achieve better maternal health outcomes in Eastern European countries, action is required to ensure access to adequate maternal care for all women.

One of the needed policy solutions to increase mothers' physical and financial access to necessary care, especially in rural areas is to ensure the financial protection of women in terms of good maternal care coverage and to provide financial incentives to care providers and improved working conditions. Furthermore, in response to the high OOP payments found in maternal care provision, governing bodies should regulate prices

and ensure quality of services in both the private and public maternal care sectors. However, to eliminate the deeply rooted and widespread informal payments in maternal care requires not only incentivising care providers, but also such governance measures as zero tolerance policies and punishment. We also found that women attach a high value to the reputation and attitude of the maternal care provider. In response to challenges securing maternal care with appropriate attitudes, communication and skills, priority should be given to investments in human resources and better compliance with standards and protocols. The high C-section rates and the low number of antenatal and postnatal care visits in some Eastern European countries were an alarming finding that point to inadequacies and inefficiencies in maternal care provision. It relates to all five access-related aspects explored in this dissertation. Given the complexity of this problem, intervening on a policy level alone is not sufficient. Besides all the above-mentioned policy measures, to tackle this problem it is also important to intervene on a socio-cultural level by better informing women on the benefits and risks of care they are entitled to and even by addressing broader gender inequalities. Even though many Eastern European countries experience a shortage of resources, this dissertation also provides evidence that a more efficient allocation of existing resources would help in overcoming the access barriers women face. Furthermore, although practices cannot be directly transferred from one country to another, building on good practices abroad could be an essential starting point for reducing the barriers to accessing adequate maternal care in Eastern Europe.

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A

Appendices

APPENDICES A – ADDITIONAL INFORMATION FOR CHAPTER 2

Appendix A1: Prisma checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	See title
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	See abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	See Introduction
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	See Introduction
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	Not publicly available
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	See Methods
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	See Methods
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	See Methods
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	See Methods
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	See Methods
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	See Methods
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	See Methods
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	n.a., not meta-analysis
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	n.a., not meta-analysis

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	n.a., not meta-analysis
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	n.a., not meta-analysis
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	See Results and Figure 2.1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	See tables and Appendix A1
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	n.a., not meta-analysis
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	n.a., not meta-analysis
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	n.a., not meta-analysis
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	n.a., not meta-analysis
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	n.a., not meta-analysis
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	See Discussion
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	See Discussion
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	See Discussion and conclusion
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	n.a., no external funding

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: **www.prisma-statement.org**.

Appendix A2: Detailed description of the references included in the review

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
1	Arsenijevic et al., 2014, Shortcomings of maternity care in Serbia, Journal Article, Serbia	**Objective**: To examine quality, access Indicators and patient payments for maternity care in Serbia. **Study setting:** Serbian health system, healthcare organisation **Study design**: Fully mixed sequential approach using quantitative and qualitative data **Study population:** Mothers who used maternity care in Serbia n=95, literature review of published studies and review of policy guidelines.	**Type of analysis**: Used qualitative and quantitative techniques. Framework analysis. Questionnaires to women in maternity care, published studies and official guidelines. **Validity (internal):** Triangulation of data by using different sources to reduce bias. **Validity(external):** Not discussed, but medium representativeness - data collected from three regions **Reliability (repetitiveness):** Not discussed. High due to mixed method study design and triangulation of data – results pooled together.	**Healthcare reforms:** Innovation – presence of father is now allowed. BUT ✍ fathers are obliged to bring the results of laboratory tests not older than 7 days to prove that they do not have an infectious disease + pay 50-150 euros ✍ reduce access.	**Approachability:** Spatial access adequate ✍ spread over the country, wards accessible even in small villages. Biggest problems ✍ temporal and psychological access. Temporal access ✍ mainly women complained about problems of outdated referral (had to wait until new is made and brought) and waiting time for a free bed and/or certain procedures. Psychological access is the main problem **Appropriateness:** poor and derogative communication between user and provider. Medical staff is very distant, does not answer questions and use inappropriate and cynical nicknames (besides attitude). Providers lack skills to interpret women's needs and behaviour. Positive ✍ husbands could support wives during birth. **Availability:** Problems with immediate breastfeeding ✍ explained by a lack of skilled nurses to help and encourage mothers. **Affordability:** No official patient charged (co-payments) in public facilities. Report quasi-formal and informal payments. Quasi-formal payments ✍ caused by the discrepancy between official and hospital guidelines. Although the former claim that maternity care is free of charge, the latter impose formal charges. They are used for standard services that should be free of charge. Even if the service finally is not used– money is not returned. Informal payments ✍ either initiated by the patient or by the patient's relatives to ensure better access, or requested by medical staff (physicians, midwives) to provide needed care. Informal payments receive any practitioner present during the birth, but most often obstetrician – in order to secure his/her presence during the birth and accessible services. Women who had connections could avoid informal payments and receive the care services wanted, therefore report fewer inconveniences. Women who did not bribe anyone having no connections fully regretted doing so. Women pay informally not because they approve or normalize it; they simply do it for the safety of child ✍ afraid to not to receive care needed.					**Conclusion**: Good network of maternity wards, but problems in treatment received. Women feel vulnerable due to informal payments, "special connections", poor communication and besides manner of medical staff. **Recommendations**: Improve beside manners of medical staff, strengthen the role of midwife, improve quality controls of maternity wards; Involvement of private practitioners paid by the national insurance fund to increase competition and decrease the need for informal payments and "connections"

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2	Straus et al. 2013, Determinants of implementation of maternal health guidelines in Kosovo: mixed methods study, Journal Article, Kosovo	**Objective:** to explore the implementation of maternal health guidelines in Kosovo, focusing on determinants to contextualize for local use. **Study Context:** Kosovo health system, healthcare organisation **Study Design:** Mixed methods study: survey (n=39; quantitative), interviews (n=5 qualitative), focus groups (n=19) and in-person consensus meeting (n=18) **Study Population:** Stakeholders, clinicians, managers, researchers, policy makers, WHO office in Kosovo	**Type of Analysis:** SPSS statistics combined with content analysis **Validity(internal):** internal validity check for each phase **Validity(external):** Applicable to whole country region since analysis was conducted at local and national level **Reliability:** Not discussed, but triangulation of data		**Approachability:** Poor patient transfer ability from rural to urban centres (spatial access). ➔ There is some access, but it's not regular **Availability:** The fragmented infrastructure has affected the limited availability and consistent access of required medications. ➔ lack of resources or equipment					**Conclusion**: Fragmented health system and miscommunication among relevant stakeholders creates barriers of assessing and improving maternal care and creates access barriers. **Recommendation:** Countries in the region should share information on barriers and strategies how to improve access and quality by implementation of health strategies.

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3	Stepurko et al. 2013, Informal patient payments in maternity hospitals in Kiev, Ukraine, Journal article, Ukraine	**Objective:** To explore and understand the practice of informal payments for childbirth in maternity hospitals in Ukraine, Kiev. **Study Context:** Health system in Ukraine, Urban area **Study design:** ethnographic qualitative study using face-to-face semi structured interviews **Study population:** Young mothers (n=11) (by convenience sampling) and obstetricians (n=6); key informants (n=3) (by snow-ball sampling) In total n=20	**Type of analysis:** qualitative: analytic induction methodology (transcripts distribute across themes and group) **Validity (internal):** 3 different participant groups-mothers, obstetricians and key informants; adjusted questionnaire wording for different groups **Validity(external):** Limited generalizability to whole of Ukraine. All women in study population – high educated working in university – might differ in opinions from low educated and low income. **Reliability:** Not discussed. High internal validity increases reliability, but external validity and methods of sampling might decrease		**Approachability:** resource allocation (in rural areas). Pre-arranged birth with informal payments involved – higher treatment access. If one is not able to pay informally, care provided by certain number of obstetricians is not accessible, because they work on informal payments. Certain procedures are not accessible - inability to pay out-of – pocket. **Availability:** lack of pharmaceuticals and outdated equipment. **Positive aspects of maternal care access**: More choice for patient: position, if want a partner during labour, rooming-in, stimulated breastfeeding, and allowed visits – innovations at institutional level. **Affordability:** The current system of maternity care provision, based on patients' ability to pay, Does not consider key important principles of equity and efficiency. Patients have to motivate low-paid healthcare staff by informal payments to receive care in shorter waiting times. Also to avoid the "standard care" and anxiety and ensure procedure accessibility. Payments fill gap in public care funding and are one of highest in CEE. Paid mostly to obstetricians, gynaecologists and surgeons to secure attendance during birth. Amount agreed through bargaining process, but people tend to pay even more and give presents in kind to express gratitude for care. Price is bargained to avoid inconvenience of too high or low payment. Usually paid right after birth. Ask for services they are already paid for and for extra services they take care of. These payments keep good specialists in the country and keep the care accessible. Unofficial income several times higher than official. Average country income – 240$, obstetrician salary 170$. Not paying informally is an exception. Monetary gratitude or informal payments – negatively perceived vs. non-monetary informal payments. Depended on the complications during the childbirth. "price" of a childbirth ranges from US $300–500 to US$4000–5000. **Quasi-official payments:** Payments at cash-desk receiving receipt even though should be for free. Introduced by maternity home and are fixed cost (charity contributions about US$100).				**Conclusion:** quasi-informal and Informal payments- common practice in Kiev maternity hospitals and bargaining is a part of pre-childbirth arrangement. Underfunded system + inefficient resource allocation, lack of state regulation make private practice in public sector possible. Should not be acceptable measure for adequate care = inequity because care based on ability to pay. **Recommendations:** regulation of "quasi-official patient payments at healthcare facility level; staff training to improve professional ethics. Both actions should be combined with improved maternal care sector governance to attain international quality standards and adequate access. Increase salary + labour productivity. Introduce social health system and Legalize (tax) the official payments ✍ to eliminate informal payments.

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4	Larivaara, 2012, Journal article, Reproductive health services in Russia and CEE - a review of providers and provider-patient-relations research in English 1990-2010, Russia, CEE countries	**Study objective:** to construct a general view of the reproductive health services situation in Russia and CEE countries for the purposes of a research project. **Study context:** Russian and CEE health systems **Study design:** Qualitative: Empirical reports and systematic literature review. **Study population:** Peer-reviewed high-quality articles, working papers and descriptions of personal experiences.	**Type of analysis:** Not discussed Systematic literature review **Validity(internal):** Triangulation of sources and systematic way of literature review, inclusion criteria **Validity(external):** Not discussed Researched only central Russia and broadly reviewed CEE region **Reliability:** Not discussed. Triangulation of sources – high reliability		**Approachability/Acceptability/Appropriateness:** To understand access issue - grouping CEE countries together is problematic since the countries differ in culture, religion, history, ethnicity, and politics. Inability to trust healthcare providers in public sector, expert-cantered and technically-oriented, and health providers showed little concern for patients' psychosocial and emotional needs and privacy ✍ holds back seeking the care. ➔ long waiting times **Affordability:** Widespread using different methods, people pay to secure access of necessary or wanted care. Patients unhappy they have to pay.					**Conclusion:** Patients not satisfied with treatment and childbirth services in St. Petersburg. Provider-patient relationships are problematic in terms of authority, trust and patient involvement. Studies from CEE countries are too few to allow any definite conclusions, but worry about problems of patient involvement, and sensitivity to patients' needs. **Recommendations:** Not discussed

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5	Baji et al., 2012, Informal payments for healthcare services and short-term effects of the introduction of visit fee on these payments in Hungary, Journal article, Hungary	**Study objective:** to study short-term effects of the visit fee introduced in Hungary in 2007 on informal patient payments and if it decreased the probability of paying informally. **Study context:** Hungarian Health system, households **Study design:** Quantitative: cross sectional **Study population:** Face-to face interviews of household respondents (n=2500). Household selected by random walking method, respondent -by Lisa Kish method	**Type of analysis:** Quantitative: probit regression. **Validity (internal):** Dummy variables, interactions, avoided selection bias, causal relationship between variables. Face to face interview to avoid missing data **Validity (external):** Study design, sampling method and sample size and inclusion criteria ensures external validity. **Reliability:** Not discussed Data collected after and over a short period of time.	**Health system reform:** - Introduction of official co-payments in order to reduce informal payments. - Introduction of visit fees is to reduce service use and saving public resources than in decreasing informal payments. - In 2006-2007 reforms to decrease budget deficit – cut on spending and availability of acute and increased chronic hospital beds - Patients now can chose between 2-3 hospitals – choice restricted	**Affordability:** - Paying informal payments depends on income, perceived health status and education – those of higher status pay more. - Probability of paying informally is significantly higher of gynaecological visits (especially connected to maternal care) seem to be 'informally privatized' by informal payments. Here, the amount of informal payments is similar to those in the private sector (in the private sector in Hungary, the tariff of a gynaecology visit varies between 19–37 Euros). This means that physicians use public resources to provide public services but obtain an informal payment similar to the price of private visits.					**Conclusion:** Reduction of paying informally only for elderly for in-patient care. Informal payments are widely spread in Hungary, especially in in-patient care. Introduction of the visit fee to reduce informal payments seems to be minor. **Recommendations:** Research should focus on the origin, causes and effects of the phenomenon of informal payments. In-depth qualitative study for motives and acceptance of these payments

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6	Combulini et al., 2011, Access of Roma to sexual and reproductive health services: qualitative findings from Albania, Bulgaria and Macedonia, Journal Article, Albania, Bulgaria and Macedonia.	**Study Objective:** To explore access of Roma in Southern-Eastern European to sexual and reproductive health services. **Study Context:** Albanian, Bulgarian and Macedonian health system, Rural/Urban areas **Study design:** purposely selected, qualitative study design **Study population:** 7 focus groups with 58 male and female participants from Roma communities from the 3 countries	**Type of analysis:** Qualitative thematic analysis using AtlasTi software to analyse transcripts **Validity (internal):** to ensure quality disconfirming evidence and deviant cases were examined, local language used, conducted by professional from international parenthood federation who have worked with Roma communities. **Validity (external):** Not discussed Population assessed in 3 countries including one rural and urban region per country, + limited amount of participants due to study design + professionals not included. **Reliability:** Not discussed.		**Approachability:** Number of barriers – geographical barriers, they have to bring their own consumables. Health system in the region has failed to protect of access problems most vulnerable groups of society by financial and equitable care arrangements, yet, their needs tend to be greater than those of the population and due to numerous disadvantageous socio economic reasons and high birth rates - Roma women are high risk for pregnancy complications. ✍ Lack of health professionals in areas of Roma settlement. Due to geographical difficulties – refusal of emergency services **Appropriateness:** Psychological barrier ✍ knowing the attitude, affordability and spatial access problems, creates psychological barrier – avoid seeking care either because access or because of personal experience or experiences of people in their social network. **Acceptability:** Gender inequality – limited women's autonomy reduces chances of maternal care access, even to seek information. Ethnic stigma -> denial of service accessibility. In Macedonia and Bulgaria Roma mothers often left unattended by professionals during labour and after ✍ cause mortality. ✍ No language interpreters. Stigma and verbal abuse at healthcare institutions. Degrading treatment. ''Gipsy rooms'' – childbirth rooms for Roma women – access of standard care denied. Cultural barrier ✍ used to deliver and handle pregnancy in traditional ways. Informational barrier ✍ not- up to date information why it would be beneficial to seek professional care. **Availability:** Health system in the region has failed to protect of access problems most vulnerable groups of society by financial and equitable care. Not adequate availability of professionals in areas when Romani women live. **Affordability:** lack of financial resources (poverty). Limited affordability even to care that is included in insurance. Cannot afford co-payments, informal payments, cannot pay insurance (1/3 in Bulgaria) ✍ cannot afford care and childbirth services					**Conclusion:** No financial protection for vulnerable groups of population. Exclusion of insurances and existing informal payments are the most pressing challenges to improve access of maternal care. Geographical access, poor information received and gender equality are strong barriers to access care. **Recommendations:** in order to improve access necessary to overcome racial discrimination, improve awareness and information and address gender inequalities. Policy makers need to prioritize equitable access to essential health services to make sure care is available under any conditions. Improve protection of human rights and increase awareness of maternal care issues.

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7	Janevic et al, 2011, "There's no kind of respect here" A qualitative study of racism and access to maternal healthcare among Romani women in the Balkans, Journal article, Serbia and Macedonia	**Study objective:** To develop a conceptual framework showing how three levels of racism – personal, internalized and institutional – affect access to maternal healthcare among Romani women **Study context:** Serbian and Macedonian Health system **Study design:** qualitative study, purposive sampling – focus groups (with discussion questions) and interviews **Study population:** 8 focus groups of Romani aged 14-44 (n=71); gynaecologists (n=8); informants from NGOs and state institutions (n=11)	**Type of analysis:** Qualitative analysis: transcripts transcribed and translated to English, analysed by constant comparison method, divided in themes. Used AtlasTi software. **Validity (internal):** study instrument developed and results analysed together with experts in a field- Roma Expert NGOs. Interviews separately developed for health professionals and policy experts – questions and answers double-checked by translator **Validity (external):** Not discussed Research conducted in capitals and smaller towns. **Reliability**: High - used multiple methods data collection and analysis methods and checked by experts and translator;	**Heath care reforms:** Privatisation of healthcare in Macedonia decreases access of care due to increased costs to patient, shortages of gynaecologists in Romani neighbourhoods ✍ contributing to institutional racism.	**Approachability/Acceptability:** The three domains of racism – personally-mediated, internalized and institutional hinder Romani women from access of maternal care. All 3 racism factors on access issue are perceptions and interactions with health system, psychological factors, social environment and resources, lack of health system accountability, financial needs and exclusion of education (co-issues that cause racism and access problems). Cultural differences (misbehaviour in health providers' eyes) hinder women back to come again. Racism in all levels can create inequalities of access maternal care. Clear link between racism and healthcare access, as well as between perceived quality and discrimination influences access. Racism causes internal psychological barrier to seek for care – not valuing yourself – mediator for access. Health system excludes covering needs for Roma. ✍ Receiving poor communication and quality they don't want to access/seek the care another time. ✍ Experience longer waiting times due to Racism. ✍ Miscommunication between providers and patients causes fear for women - created a barrier for access. **Affordability:** Cannot afford services like husband or family attendance which is culturally important✍ creates willingness to access care at all.				**Conclusion:** Experiences of Romani women demonstrate psychological and structural pathways by which racism and discrimination affect access to prenatal and maternity care. **Recommendation:** Interventions to address maternal health inequalities should target barriers within all three levels of racism resulting in improvement at national / policy level, institutional organisation level and individual (empowerment of Roma women).

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8	Habibov, 2011, On the socio-economic determinants of antenatal care utilisation in Azerbaijan: evidence and policy implications for reforms, Journal Article, Azerbaijan	**Study objective:** examines the utilisation of antenatal care in Azerbaijan to identify the socio-economic determinants of the usage, and its frequency, timing and quality. **Study Context:** Health system in Azerbaijan, households **Study design:** quantitative cross-sectional study using Azerbaijan demographic and health survey **Study population:** n= 8444 women aged 15-49	**Type of analysis:** Quantitative - descriptive analysis - binomial logit, two ordered logit and negative binomial regression models **Validity (internal):** survey internationally developed by professionals, peer reviewed and translated, variables are validity checked. **Validity external:** Valid: participant amount and inclusion of all country regions. **Reliability:** Not discussed survey includes large sample + high quality analysis technique	**Healthcare Reforms**: "Semashko" model collapsed due to war with Armenia and then Economic crisis (total expenditure dropped - 9% to 3.5%). No finance – no effective health policy by government. 10 year strategic plan– poverty reduction and economic development; economic development of regions – aimed at better accessibility and affordability of healthcare.	**Approachability:** determined by – place of living (rural area and region perhaps most important barrier – even if they use then late) **Acceptability:** ✍Determined by education and knowledge. ✍ Desirability of pregnancy (undesired child reduces willingness of access). Utilisation and access ✍ multistage process in which decisions are sequential **Affordability:** Wealth gradient (OOP – cover 78% of healthcare costs 1/3 of cannot access + have 3 times higher infant mortality).					**Conclusion:** Results demonstrate an inequality in care utilisation between rural/urban areas and regions. It can be explained by lack of mechanisms of linkage between regional priorities and the government healthcare expenditures by regions. Poverty and place of living are associated with access barriers. **Recommendations:** Prioritize allocation of budgetary resources for healthcare, promote antenatal care and reduce poverty.

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					availability	approachability	Acceptability	afforda-bility	appropriateness	
9	J. Mishtal, 2010, Neoliberal reforms and privatization of reproductive health services in post-socialist Poland, Journal article, Poland	**Study objective:** Examines the restrictions on access to family planning, abortion, maternity care, assisted reproduction and other gynaecological services. Draws attention to need for state-subsidized reproductive health services, the reform of abortion law, and regulation of privatized services. **Study context:** Polish health system, healthcare organisation **Study design:** mixed methods: literature review + quantitative survey and qualitative interviews. **Study population:** 418 women aged 18-40 attending 55 of those interviewed and chosen by random sampling.	**Type of analysis:** Quantitative data by SPSS software and qualitative data by ATLAS ti software where text was coded by thematic categories. **Validity (internal):** triangulation of data by using different sources to reduce bias. **Validity (external):** High - selected location represents the whole country as income is the closest to population mean + assessment performed in 3 areas (urban and rural). **Reliability:** Not discussed Data collection strengths – triangulation of data with quantitative and qualitative elements.	**Healthcare reforms:** Neoliberal reforms ✍gives market forces primacy over economic and social policy ✍social welfare cuts, privatization of health system, decentralization and deregulation – influence affordability. Maternity leave was cut from almost two years to less than four months, cash benefits reduced. Many basic services removed from universal coverage. Hospitals are becoming privatized- OOP rises. Loophole in law allows to selectively exclude services from "health benefit basket", and recent reforms have limited access based on ability to pay ✍ inequality	**Approachability/Acceptability:** Current healthcare policies stigmatize women's choices and deny the legitimacy of their health needs and reproductive and sexual autonomy (psychological barrier). **Affordability:** Privatization of healthcare, and the intensification. Corruption fuels unequal access privileging wealthier ones. Bribes to underpaid healthcare providers created new challenges for women in accessing services. Antenatal tests and anaesthesia and epidurals – 100% OOP. ✍The common perception is that the variety of services accessed depends on offering bribes, of which 70% are monetary; the rest are gifts such as alcohol or chocolates.					**Conclusion:** Identified need to regulate privatized services and increase access to maternity and gynaecological care. Current healthcare policies stigmatize women's choices and deny the legitimacy of their health needs and reproductive and sexual autonomy. **Recommendations:** Higher wages for public sector health professionals and better public health provision would curb informal payments. The state should support the legitimacy of women's health needs and reproductive and sexual autonomy.

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10	Homan et al., 2010, Post-conflict transition and sustainability in Kosovo: establishing primary healthcare-based antenatal care, Journal article, Kosovo	**Study objective:** To improve maternal and neonatal health in Kosovo by providing family medicine based antenatal care (ANC) available to all women close to home **Study context:** Healthcare in Kosovo, healthcare organisation **Study design:** Qualitative using training in working groups **Study population:** Antenatal care doctors (physicians and nurses n=1.299 – 319 physicians and 980 nurses), patients (n=172 in pilot study, in total n= 1.671)	**Type of analysis:** Not discussed Qualitative **Validity (internal):** Pilot project in Gjakova **Validity(external):** ANC later available in 30% of municipalities. Results representative for the whole region. Available in English, Albanian Serbian and Bosnian – could be adapted for use in other developing nations. **Reliability:** Not discussed	**Health reforms:** Newly declared independence (2008) and struggling economy case underfunding of health system and maternal care, human resource allocation concentrated in urban areas (as it is common in post-soviet medical systems). Health system is facing extra ordinary challenges in recovery, therefore low cost interventions are needed to improve maternal health. "Start where you are, use what you have, do what you can".	**Approachability:** - Access in rural areas is poor - Vehicle ownership in rural areas is rare - Spatial accessibility - biggest problem **Availability:** - Health system hampered by underfunding, availability urbanized, no strong primary care base. - ANC was available only in urban areas and by obstetrician - Lack of ambulance services					**Conclusion:** Model of family medicine-based ANC is simple to teach and emphasizes sustainability. It may be used in different cultures and health systems and offers the opportunity to improve maternal and infant health by providing low cost antenatal care, available in a woman's own community. **Recommendation:** To expand implementation of ANC for ongoing improvement of Kosovo's maternal health.

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11	Danilovich, 2010, Growing inequalities and reproductive health in transitional countries: Kazakhstan and Belarus, Journal article, Kazakhstan and Belarus	**Study objective:** To examine how growing socio-economic inequalities in transitional countries that have followed different health policy paths affect women's access to reproductive healthcare. **Study context:** Health system in Kazakhstan and Belarus, health system **Study design:** Quantitative cross-sectional study **Study population:** Women aged 18-49 seeking reproductive healthcare services in main health centres in capital cities of both countries (n=191 in Kazakhstan; n=190 in Belarus).	**Type of analysis:** Statistical logistic regression **Validity(internal):** Survey undergone forward-backward translation and pilot test among 40 women **Validity(external):** Sample size representative for capital cities. **Reliability:** Not discussed		**Approachability:** The unreformed health-care system in Belarus appears to be more accessible for all women. ✍ As healthcare expenditure in country is progressive – access issue remain relatively low in Belarus (spatial and temporal in case of emergency since the mobility is not so good) - waiting times **Acceptability:** - No adequate information and medicines. - Education factor is a weak indicator of access (highly educated women have low-paid job). **Affordability:** - Socio-economic disparities affect the access of maternal care services. -positively influences maternal care access due to health system of equal access to all and free of charge ✍ poor benefit from the system almost as much as wealthier ones. – OOPs not so much involved. Informal payments a bit involved. - Household income influence access in Belarus insignificantly.					**Conclusion:** Access to reproductive care big issue for low-income, low educated, low household income women in Kazakhstan but less to low SES in Belarus. Unreformed health-care system in Belarus - more accessible than Kazakhstan's health system **Recommendations:** Government should focus on adversities of market. Strategies: (i) central government's role in the provision of local reproductive health services; (ii) protect poorer; (iii) reduction of income disparities; (iv) improve funding

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					availability	approachability	Acceptability	affordability	appropriateness	
12	Vanagiene et al., 2009, Do the quality of healthcare services provided at personal healthcare institutions of Kaunas city and access to it meet expectations of pregnant women, Journal article, Lithuania	**Study objective:** To evaluate if the quality and access of services offered by family physicians and gynaecologists at primary healthcare institutions in Kaunas meet the needs and expectations women **Study context:** Lithuanian health system, healthcare organisation **Study design:** Quantitative, cross sectional (survey) developed by author. **Study population:** Pregnant women visiting the selected healthcare institutions at their third trimester of pregnancy – 2 family practices (n=106) and 2 maternity centres (n=202).	**Type of analysis:** Statistical analysis with SPSS 13.0 software using nonparametric chi-square and z test. **Validity (internal):** Not discussed **Validity(external):** Performed in one city – Kaunas, therefore representative of that city, but not of the whole country. **Reliability:** Not discussed		**Approachability:** - Patient of obstetrician faced no access problems compared to family physician patients (problems with appointments). - Key access problems in general – appointment scheduling, work scheduling, distance, spent time in waiting room. - Access to it maternal care meet expectations and needs of pregnant women.					**Conclusion:** The quality of antenatal healthcare provided by both family physicians and Obstetricians/ gynaecologists and access to it satisfied the needs and expectations of the surveyed women. **Recommendations:** Closer communication, more understandable explanations, more attention to preparation for childbirth, better work planning, could improve the quality of antenatal care provided by the family physicians.

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
13	Danichevski et al., 2008, Prescribing in maternity care in Russia: the legacy of Soviet medicine, Journal article, Russia	**Study objective:** Examine care that is provided to expectant mothers and new-born in postpartum period to study the effectiveness of care provided in Russian health system in order to explore how different elements of normal childbirth are managed in 19 facilities. **Study context:** Russian health system, healthcare organisation **Study design:** Mixed-method approach (structured interviews 52 + semi-structured re-interviews, discussion with key informants). **Study population:** Obstetricians in Tula (n=52), 10 obstetricians in Tver, 5 obstetricians in Dubna, key informants.	**Type of analysis:** Statistically recorded numerical data of deliveries + analysis of 52 semi structured interviews (quantitative + qualitative) **Validity (internal):** Triangulation of data **Validity(external):** Similar practices are done my other regions than Tula, but health professionals further from Moscow area might be even more isolated form scientific knowledge. **Reliability:** Addressed by assessing whether the more unconventional preparations were sold in significant amounts elsewhere which they are. Also information in interviews was validated against computerized database existing in Tula region.	Healthcare reforms: Focus on reform has been on securing the funds necessary for the health system with little attention to the care that is provides.	**Appropriateness:** - Health professionals lack knowledge to provide evidence based maternal care ∡ the further away from Russia the more isolated from scientific evidence they are in more remote parts of Russia. - Most physicians isolated from international researches and literature – lack of information source access. - Even now, Russian medical students are taught by physicians who are stuck with old ways of working. **Affordability:** - widespread use of informal payments - possible access to modern drugs, at least for those who can afford them.					**Conclusion:** Widespread divergence from internationally accepted practice. Maternal care extremely musicalized but non-evidence based medicines are used (popular during soviet times; marketed by large pharmaceutical companies or even unknown elsewhere). Much of the care provided in Russian maternities is ineffective or potentially dangerous. **Recommendations:** Need for improved forms of governance at all levels of the health system linked to development and adoption of codes of conduct on the marketing of pharmaceuticals.

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
14	Karimova et al., 2007, Maternal and child health super course for the former Soviet Union countries, Journal article, Former Soviet Union	**Study objective:** To provide a brief overview of the current state of MCH, healthcare and public health education in the FSU and suggest that situation could be improved by developing new inexpensive information exchange systems - Super course (internet-based library with public health lectures). **Study context:** Health system of former soviet union countries. **Study design:** Unclear **Study population:** 430 health professionals in 15 FSU countries aimed at educators	**Type of analysis:** Not discussed **Validity (internal):** Statistical process control utilized to ensure the quality of Super course lectures. Peer-review quality control system by 10 professionals from 5 countries, and other approaches **Validity(external):** Super course is informative and applicable world-wide. **Reliability:** Super course developed by top scientists - information given is reliable.		**Availability:** - Education of health professionals: only two established public health departments, in Estonia and Lithuania, and only one existing schools of public health - in Latvia - Access of public health information for providers (cannot afford) - Lack of international partnerships of universities and healthcare facilities – hinders from improving accessibility services in poor regions. -Not available/accessible primary prevention programs that would be inexpensive source of MCH improvement. - Lectures/information available in Russian increases the access.					**Conclusion:** Low cost, high impact projects such as Super course are needed to improve and deploy MCH education worldwide. **Recommendations:** Improved access to public health information. More information exchange on public health and prevention among faculty members across all countries, clinicians, and educators. We are encouraging MCH health professionals from the FSU to join us in mutually creating the Russian MCH library.

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
15	Danishevski et al., 2006, Delivering babies in a time of transition in Tula, Russia, Journal article, Russia	**Study objective:** To investigate the provision of maternal services in the Tula region of Russia, with an emphasis on variations in practice. **Study context:** Russian health system, healthcare organisation **Study design:** Quantitative Cross sectional study: data on each facility; process and outcome of maternal; information on maternal characteristics, intervention and outcomes **Study population:** Deliveries in Tula (n=11 123), structured questionnaires; interviews with the heads of maternity facilities and hospitals and their deputies (n=19).	**Type of analysis:** Quantitative: using SPSS **Validity (internal):** Triangulation of data: validated by comparison of information of regional statistics department and the facility. **Validity (external):** Tula considered being typical, but is only one region of Russia, it therefore cannot be generalized to all of Russia, but broad results applicable to all former soviet countries with similar systems. **Reliability:** **Not discussed** Triangulation of data		**Availability:** - Availability of equipment and therefore procedures differs from facility to facility. - The obstetric practices observed differ both from the widely used international recommendations and from standards issued by the Russian Ministry of Health. - Not available modern and standard procedure, instead used routine enema, public shaving, recruitment bed position that is considered to be without effect or even harmful - Available public fund influence availability of procedures **Affordability:** - Officially, maternal care is free in Russia yet payments were reported in 11 of the 19 facilities surveyed. The question did not explicitly distinguish between formal and informal payments, but the responses received concerned only formal over-the-counter charges for 'additional', mainly hotel services. Payments are more commonly reported in maternal homes (83% of heads of maternal homes confirmed charges) than in general hospital departments (50% confirming charging). **Acceptability** - Lower education seems to be a hindering factor to seek timely care.					**Conclusion:** Over-medicalization arises in a system with large numbers of specialists. Practice variations - correlated with characteristics of mothers and equipment availability. **Recommendations:** Reform is clearly needed. Improvements in practice will require addressing these structural elements and steering the clinical culture towards evidence-based medicine, rather than simply writing new decrees.
16	Parkhurst et al., 2005, Journal article, International maternal health indicators and middle-income countries: Russia, Russia	**Study objective:** To review the maternal health situation in Russia, looking at commonly used measures of maternal care drawn on a range of information sources. **Study context:** Russian health system, **Study design:** Mixed methods: primary data collection, secondary data analysis, literature review and empirical research conducting interviews. **Study population:** Literature, key informants (via interviews) and 19 interviews in maternal care facilities in Tula.	**Type of analysis:** Qualitative and quantitative (statistical) analysis **Validity(internal):** Triangulation of data **Validity(external):** National and local context analysed, though not in many regions, medium external validity **Reliability:** Not discussed Triangulation of data		**Approachability:** - Russia has a compulsory health insurance system, in practice about 10% of the population fall outside it ≠ mostly mothers under 18 and migrants. **Affordability/approachability:** -Due to the high availability - care should be approachable, but informal payments. Therefore affordability reduces the access of maternal health. **Availability:** Infrastructure permits nearly universal access, but the system was established before the recent decline in fertility now there is overprovision. -Most countries of the former Soviet Union have extensive health infrastructures, with Russia reporting twice as many midwives per 100,000 population than many Western countries.					**Conclusion:** Russia is hampered by lack of transparency, investigative expertise, and established procedures, and there is little evidence of tangible improvements in Practice. **Recommendations:** Approaches for looking at quality and differential access to care, as well as maternal death audits, may be more useful for guiding maternal health policy in Russia

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
17	Parkhurst et al., 2005., Health systems factors influencing maternal health services: a four-country comparison ,Journal article, Russia, Bangladesh, Uganda and South Africa	Study objective: Provide an example of how a health systems approach can benefit the understanding of maternal care services **Study context:** Health system in Russia, Bangladesh, Uganda and South Africa, rural/ urban areas **Study design:** Qualitative – literature review (studies + grey literature); key informants, existing datasets **Study population:** Published and unpublished literature, key informants through snowball sampling,	**Type of analysis:** Qualitative: Comparative analysis **Validity(internal):** Not discussed Triangulation of data **Validity(external):** 2 middle income and 2 low income countries compared – low applicability on whole low to medium income countries **Reliability:** Not discussed Triangulation of sources	**Healthcare reforms:** Lack of reforms seen in Russia after the transition from the Soviet period corresponds to a lack of progress in many health indicators. - User fee introduction may reduce use of services, but removal may not increase use due to a number of possible interlinked access barriers, including informal fees.	**Appropriateness (Russia):** - Maternal health services are dependent on the functioning of the entire health system + importance of approaching issues from a health systems perspective. - (psychological): physical and verbal abuse hinders back women from using services ✍ The reasons can in part be traced to a health system. - To understand access problems - important is analysis of the structures underlying maternal care, looking at the causal pathways between technical interventions and maternal outcomes. **Availability:** - Highly available skilled attendance still brings bad maternal health outcomes. **Affordability:** - Informal payments for maternity care are higher than other services due to the planned nature of the event, prolonged contact with the system, and user willingness to contribute ✍practice will reduce service accessibility for non-paying users by redirecting resources to fee-payers.					**Conclusion:** Health system characteristics affecting maternal health were identified The most important common systems issues- human resource structures, the public–private mix of service provision and health sector reforms. Systems issues influence the access and utilisation of services, quality of care maternal health outcomes. **Recommendations:** Technical interventions + adjustment in settings of the health systems within which these services take place ✍ also horizontally not only vertically.
18	Belli et al.; 2004; Out-of-pocket and informal payments in health sector: evidence from Georgia; Journal article; Georgia	Study objective: To analyse the process of collection and distribution of OOP (also informal) payments, to explain why they are so prevalent, to discover their consequences on access and quality of care. **Study context:** Georgian health system, healthcare organisation **Study design:** Qualitative: 2 groups – patients (in-depth interviews + group discussions) and providers (in depth interviews) **Study population:** Patients (99) and providers (40)	**Type of analysis:** Not discussed Qualitative methods **Validity(internal):** Triangulation of data, inclusion criteria **Validity (external):** Geographical localities selected – capital and country representative rayon – Gori (urban + local) **Reliability:** High due to Triangulation of data, study population's inclusion criteria and geographical selection criteria.		**Affordability:** **-**OOP s (formal and informal) are the main source health financing – approx. 70-80% of total health expenditure ✍ almost half of the total revenue from OOPs is informally paid. - Also other countries like Moldova and Azerbaijan private spending is estimated to be around 80%. - Several physicians admitted asking payments about services that should be free of charge – justified by complaints about low salaries - Mostly you have to pay informally for access of extra services they want to purchase – to secure doctors presence at childbirth. - informal payments used to skip waiting lists - due to inability to pay – often undergo delay or interruption of care -informal and OOPs resulting in inequity, making services unaffordable for most people.					**Conclusion:** Paying for health services in Georgia has become a common and accepted practice, big part of these payments are unrecorded. The payments produce severe consequences on equity and efficiency, making services unaffordable for most people. **Recommendations:** In the context of an increasing demand, further adjustments on the supply side could also become less painful to carry out.

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
19	Shuvalova et al.; 2015; Maternity care in Russia: Issues, Achievements, and Potential; Journal article; Russia	Study objective: To provide basic facts about maternity care services within the health system in Russia **Study context:** Russian health system, policy and healthcare use **Study design:** Quantitative– literature review (studies + grey literature); existing datasets **Study population:** Published and unpublished literature, key informants	No information about research methodology. **Type of analysis:** Comparative analysis	**Healthcare reforms:** - 2012: registrations of births with WHO recommendations ✍ completeness & quality of data, international assessments. - 3 level specialized medical systems for new-borns and mothers. - Since 2006: Large scale state program: National Health Project	**Availability:** Better availability of good quality services and availability of trained professionals with up-to-date care. **Approachability/ Appropriateness:** - In recent years Russia has succeeded to improve approachability and appropriateness of maternal care by changes in traduced in the system, training of medical staff, development of intensive care technologies, and capacity of medical-genetic and counselling services, better data collection, and standardization of health. - 90% women access physician in the first trimester. -The highest maternal deaths are found in most remote and rural areas (North Caucasus & Far Eastern regions. -Consistent decrease in maternal & perinatal mortality since the introduction of up-to-date medical technologies providing obstetric services. -Since Health Project 2006: Improved approachability to a good quality care with high technologies, improved maternal healthcare standards. Still a barrier of access in rural areas which is 26% of the country. - Opening of new perinatal centres is improving the good care approachability. **Acceptability:** 99% women report using antenatal care services.					**Conclusions:** In 10 years maternal mortality fell by 50% (23.4 to 10.8 per 100,000). Recently, Russia has succeeded in optimizing the maternal health system by increasing its approachability and appropriateness (quality). It has been achieved through training of the medical staff, development of intensive care units and technologies, building medical and counselling capacity, prenatal diagnosis and improved standard data collection and registration.
20	Stativa et al.; 2014; Characteristics and prenatal care utilization of Romanian pregnant women; Journal article; Romania.	Study objective: To describe the degree to which Romanian women access free prenatal care services, and to describe the demographic profile of women who are at risk for underutilisation. **Study context:** Romanian Health system, healthcare organisation. **Study design:** Secondary data from national survey; cross-sectional study **Study population:** Romanian mothers and children (N=914)	**Type of analysis:** Quantitative Secondary data analysis. Kotelchuck's adequacy of perinatal care unitization Index to measure adequacy; cross-tabulations: Pearson's Chi-squared and Cramer's V using SPSS 19.0 **Validity(internal):** High: Stratified Random sampling, survey pre-test **Validity (external):** Representative for the whole country: large number of participants and selected via stratified random sampling method (each region selected rural + urban) **Reliability:** High: Randomized study, Pre-tested study methods, methods tested for bias, results are representative and methods reliable.		**Availability** - The available care goes unused by the most vulnerable people of the population **Acceptability & Approachability:** - 78% of mother underutilized prenatal care services: mostly young, members of ethnic minority, poor, uneducated, and rural. - Those who utilized the care to the greatest degree mainly belonged to opposite group: wealthy, older, ethnic majority, educated and living in cities. - However, care utilisation has been improved in comparison to past **Appropriateness:** - Only 22% mothers received adequate care. - Substandard care **Affordability:** - Even though it is free of direct costs, there is underutilisation of care. There might be some worrisome unforeseen costs attributed to the vulnerable population. -Eliminating cost of care alone is insufficient.					**Conclusions:** These finding of risk factors for underutilisation of care illustrate worrisome magnitude of the problem in Romania, especially among women with low income and education attainment. **Recommendations:** Future studies should examine factors that contribute to the underutilisation of care, whether it corresponds to negative health outcomes and whether targeted social interventions and outreach could help improve care.

Nr	Reference; year of publication; title; type of publication and country	Objective of study; Study setting; Study Design; Study Population	Evaluation of study ; Type of analysis; Validity and Reliability	Healthcare reforms	Main Findings: Access					Conclusion & Policy Recommendations
					availability	approachability	Acceptability	afforda-bility	appropriateness	
21	Sado et al.; 2014; The influence of women's empowerment on maternal healthcare utilization: Evidence from Albania; Journal Article; Albania.	Study objective: To investigate the women's empowerment within the household on antenatal and postnatal care utilisation in Albania. **Study context:** Albania's health system. Healthcare organisation. **Study design:** Quantitative Study population: 7999 households with women age 15-49. Study used subsample of 1303 married women who delivered up to 5 years prior the interview.	**Type of analysis:** Bivariate and multivariate analysis based on demographic and health survey using regression models **Validity(internal):** High. It is a secondary analysis of already existing high quality dataset using strong statistical analysis **Validity (external):** High: Nationally representative data, large sample, randomized. **Reliability:** Internal and external validity is high		**Acceptability& Approachability:** **-** Women's empowerment and autonomy in household with respect to the use of antenatal and postnatal care. -Being well educated, employed and living in economically good conditions is positively associated with women's autonomy and therefore with the use of maternal care. - Woman's decision-making power at home and attitudes towards domestic violence are important determinants for antenatal and postnatal care. - Postnatal care is associated with low autonomy in decision making and low self-esteem, which might be connected to supply side – low quality of services.					**Conclusions:** Decision making power and attitudes towards gender roles are found to be significantly associated with the use of facility childbirth and the use of antenatal and postnatal services. **Recommendations:** Study results suggest that policy actions that increase women's empowerment at home could be effective in helping assure good maternal health.

Appendix A3: Reference list of coded articles analysed by systematic literature review approach

1.	Arsenijevic, J., Pavlova, M., & Groot, W. (2014). Shortcomings of maternity care in Serbia. *Birth, 41*(1), 14-25. doi: 10.1111/birt.12096
2.	Straus, S. E., Moore, J. E., Uka, S., Marquez, C., & Gulmezoglu, A. M. (2013). Determinants of implementation of maternal health guidelines in Kosovo: mixed methods study. *Implement Sci, 8*, 108. doi: 10.1186/1748-5908-8-108
3.	Stepurko, T., Pavlova, M., Levenets, O., Gryga, I., & Groot, W. (2013). Informal patient payments in maternity hospitals in Kiev, Ukraine. *Int J Health Plann Manage, 28*(2), e169-187. doi: 10.1002/hpm.2155
4.	Larivaara, M. (2012). Reproductive Health Services in Russia and CEE-a Review of Providers and Provider-Patient-Relations Research in English 1990-2010. *Finnish Yearbook of Population Research*(47).
5.	Baji, P., Pavlova, M., Gulacsi, L., Zsofia, H. C., & Groot, W. (2012). Informal payments for healthcare services and short-term effects of the introduction of visit fee on these payments in Hungary. *Int J Health Plann Manage, 27*(1), 63-79. doi: 10.1002/hpm.1106
6.	Colombini, M., Rechel, B., & Mayhew, S. H. (2012). Access of Roma to sexual and reproductive health services: qualitative findings from Albania, Bulgaria and Macedonia. *Glob Public Health, 7*(5), 522-534. doi: 10.1080/17441692.2011.641990
7.	Janevic, T., Sripad, P., Bradley, E., & Dimitrievska, V. (2011). "There's no kind of respect here" A qualitative study of racism and access to maternal health care among Romani women in the Balkans. *Int J Equity Health, 10*, 53. doi: 10.1186/1475-9276-10-53
8.	Habibov, N. N. (2011). On the socio-economic determinants of antenatal care utilization in Azerbaijan: evidence and policy implications for reforms. *Health Econ Policy Law, 6*(2), 175-203. doi: 10.1017/s1744133110000174
9.	Mishtal, J. (2010). Neoliberal reforms and privatisation of reproductive health services in post-socialist Poland. *Reprod Health Matters, 18*(36), 56-66. doi: 10.1016/s0968-8080(10)36524-4
10.	Homan, F. F., Hammond, C. S., Thompson, E. F., Kollisch, D. O., & Strickler, J. C. (2010). Post-conflict transition and sustainability in Kosovo: establishing primary healthcare-based antenatal care. *Prehosp Disaster Med, 25*(1), 28-33.
11.	Danilovich, N. (2010). Growing inequalities and reproductive health in transitional countries: Kazakhstan and Belarus. *J Public Health Policy, 31*(1), 30-50. doi: 10.1057/jphp.2009.47
12.	Vanagiene, V., Zilaitiene, B., & Vanagas, T. (2009). Do the quality of health care services provided at personal health care institutions of Kaunas city and access to it meet expectations of pregnant women. *Medicina (Kaunas), 45*(8), 652-659.
13.	Danichevski, K., McKee, M., & Balabanova, D. (2008). Prescribing in maternity care in Russia: the legacy of Soviet medicine. *Health Policy, 85*(2), 242-251. doi: 10.1016/j.healthpol.2007.08.001
14.	Karimova, S., Laporte, R., Shubnikov, E., & Linkov, F. (2007). Maternal and child health supercourse for the former Soviet Union countries. *Matern Child Health J, 11*(6), 628-633. doi: 10.1007/s10995-007-0204-5
15.	Danishevski, K., Balabanova, D., McKee, M., & Parkhurst, J. (2006). Delivering babies in a time of transition in Tula, Russia. *Health Policy Plan, 21*(3), 195-205. doi: 10.1093/heapol/czl001
16.	Parkhurst, J. O., Danischevski, K., & Balabanova, D. (2005). International maternal health indicators and middle-income countries: Russia. *Bmj, 331*(7515), 510-513. doi: 10.1136/bmj.331.7515.510
17.	Parkhurst, J. O., Penn-Kekana, L., Blaauw, D., Balabanova, D., Danishevski, K., Rahman, S. A., . . Ssengooba, F. (2005). Health systems factors influencing maternal health services: a four-country comparison. *Health Policy, 73*(2), 127-138. doi: 10.1016/j.healthpol.2004.11.001
18.	Belli, P., Gotsadze, G., & Shahriari, H. (2004). Out-of-pocket and informal payments in health sector: evidence from Georgia. *Health Policy, 70*(1), 109-123. doi: http://dx.doi.org/10.1016/j.healthpol.2004.03.007
19.	Shuvalova, M. P., Yarotskaya, E. L., Pismenskaya, T. V., Dolgushina, N. V., Baibarina, E. N., & Sukhikh, G. T. (2015). Maternity care in Russia: issues, achievements, and potential. *Journal of Obstetrics and Gynaecology Canada*,*37*(10), 865-871.
20.	Stativa, E., Rus, A. V., Suciu, N., Pennings, J. S., Butterfield, M. E., Wenyika, R., & Webster, R. (2014). Characteristics and prenatal care utilisation of Romanian pregnant women. *The European Journal of Contraception & Reproductive Health Care*, *19*(3), 220-226.
21.	Sado, L., Spaho, A., & Hotchkiss, D. R. (2014). The influence of women's empowerment on maternal health care utilization: Evidence from Albania.*Social Science & Medicine*, *114*, 169-177.

APPENDICES B – ADDITIONAL INFORMATION FOR CHAPTER 3

Appendix B1: Key question included in the focus group discussions

1. Do you think that the payments for maternal care were a problem to access/use certain services?

2. Did you ever have to pay for maternal care unofficially in cash or kind?
   – If yes, what was the reason for it? (e.g. gratitude, ensuring quality, it is widely accepted method)

3. In your opinion, what limits quality of antenatal, postnatal and childbirth care services in Georgia to you and all women irrespective of their socio-economic status and health conditions?

4. Do you think that the limited quality of maternal healthcare services was a barrier to seek for the care (e.g. poor attitude, conditions in healthcare unit, treatment itself)?

5. Did you experience any maternal care services being not available in the area you live (either not existent or shortage of availability) during antenatal, childbirth or post-natal period?
   – Was that a barrier to seek for the health service?

6. Did you experience any issues to access maternal care services during antenatal, childbirth or post-natal period in terms of distance or time?
   – Was that a barrier to seek for the necessary health service?

7. Do you perceive a need to receive maternal healthcare services during all the 3 phases – pre/postnatal and childbirth?

8. Could you tell whether there are any maternal care services that you think are not necessary/important?
   - Is that a reason you did not seek for them?

9. Did you feel like you were missing information on the use of maternal services?

10. Where there any other reasons that held you back from or were a barrier of using maternal care services provided by healthcare professional (e.g. culture, religion, gender relationship in family)?

Appendix B2: Key question included in the in-depth interviews

1. Do you think that the payments for maternal care are a problem to access/use certain services?

2. Have you experiences that maternal care services are handled unofficially in cash or kind?

3. If yes, what in your opinion is the reason for it? (e.g. gratitude, ensuring quality, it is widely accepted method

4. In your opinion, what limits adequacy of antenatal, postnatal and childbirth care services in Georgia to all women irrespective of their socio-economic status and health conditions?

5. Do you think that the limited quality of maternal healthcare services was a barrier to seek for the care (e.g. poor attitude, conditions in healthcare unit, treatment itself)? Could you explain why?

6. In your opinion, what are the main barriers to seek for the necessary maternal healthcare service in terms of space and time? Please explain your opinion.

7. Are any maternal care services being not available (either not existent or shortage of availability) during antenatal, childbirth or post-natal period?
   - Is the availability a barrier to seek for the health service?

8. Is there diversity of perceived need of maternal healthcare services among different women during all the 3 phases – pre/postnatal and childbirth?

9. Could you tell whether there are any maternal care services that some women might perceive as not necessary/important?
   - Is that a reason not to seek for them?

10. Do you think some women are missing information on the use of maternal services?

Appendix B3: Boxes with participant quotes

Box 1. Statements that indicate availability problems

Women
'Not enough incubators and beds in some hospitals even in capital city. Postnatal care does not exist, which is an issue.' (FGDs, multiple children, Tbilisi).
'I had problems with breastfeeding and it was a problem that there was no postnatal care which strikes most mothers.' (FGDs, single child, Tbilisi).
'More advanced services are available only in bigger cities.' (FGDs, single child, Batumi).
'Availability of anaesthesiologist was an issue.' (FGDs, single child, Kutaisi).
'Antenatal care is difficult, because we are in a rural area. We cannot always seek care in Batumi or Tbilisi city.' (FGDs, multiple children, Batumi).
'Distance is an issue for women from rural areas, because in the capital the care is more adequate and modern than in rural areas.' (FGDs, single child, Tbilisi).

Health professionals
'Some kind of services could be unavailable when needed; especially in rural areas some services are really missing and could contribute to access issues and therefore quality of healthcare. Human resources are an issue. (IDIs, gynaecologist, Tbilisi)
'There are issues in accessing care in high-mountain areas. The rest receive some care, just depends on what quality.' (IDIs, gynaecologist, Tbilisi).
'Georgia has a three-delay morale [decision to seek care, reaching care, receiving adequate care]. Once the decision [to seek care] has been made, that there is a spatial barrier, more prevalent in rural and mountain areas.' (IDIs, gynaecologist, Tbilisi).
'The third delay is when you have overcome the decision and spatial delays, but the hospital or the type of care you need is not there which happens in Georgia' (IDIs, gynaecologist, Tbilisi).

Decision-makers
'Privatization creates an access issue because the providers can decide what services they want to provide.' (IDIs, ministry advisor, Tbilisi).
'Family doctor involvement and assistance is not available for pregnant women, but would be useful to improve access.' (IDIs, Health Ministry, Tbilisi)
'There is a lack of anaesthesiologists and C-section provision in low-volume facilities' (IDIs, USAID, Tbilisi)
'There is no postnatal care available, but it should be mandatory since it contributes to maternal and child health outcomes.' (IDIs, NCDC, Tbilisi)
'No geographical access issue per se, but rather quality access issue with geographical differences in case of complications.' (IDIs, USAID, Tbilisi)
High-mountain and rural areas have issues with substandard care.' (IDIs, NCDC, Tbilisi)
'Travel distance, especially in rural areas, is coupled with financial problems.' (IDIs, UNICEF, Tbilisi)
'Challenge of transportation of new-borns and referrals in Georgia creates access barrier.' (IDIs, ministry advisor, Tbilisi).
'Healthcare regionalization instead of the existing centralized system would improve accessibility to good maternal services' (IDIs, Health Ministry, Tbilisi)

Box 2. Statements that indicate appropriateness barriers

Women
'Everywhere the care is not of good quality; you need to search for it.' (FGDs, multiple children, Tbilisi).
'Adequacy of care is not unified in the entire country.' (FGDs, single child, Tbilisi)
'Poor conditions at the facility (visual, hygiene issues). When I needed help, nobody came to help me and my husband had to manage it.' (FGDs, multiple children, Kutaisi).

Health professionals
'The women are accessing antenatal care, but what happens during those visits is an issue.' (IDIs, gynaecologist, Tbilisi).
'In Georgia, maternal mortality is high due to low quality of antenatal care. Problems are not identified in time, because of underqualified staff' (IDIs, gynaecologist, Tbilisi)
Decision-makers
'In regions, maybe it is more of a problem.' (IDIs, Ministry Advisor, Tbilisi).
'Direct effects on quality are services clearly lacking standards and there is the tendency from providers to perform unnecessary treatments or tests and prescribe unnecessary drugs. Women that die have no attendance issues, the problem can be found in the quality of care and the poor recognition of health complications. It is important to know where to go for good care and not everyone knows those things.' (IDIs, USAID, Tbilisi)

Box 3. Statements that suggest there are no appropriateness barriers

Women
'Previously, there were condition problems in the facility, but they have improved a lot. Since women have free choice where to go and choose the quality they like, it does not contribute to access barriers.' (FGDs, multiple children, Tbilisi).
'I was satisfied with the good attitudes from doctors and the proper management of my pregnancy that involved complications.' (FGDs, multiple children, Tbilisi).
'I knew a good doctor through friends and I was also very happy with the services, [I did not make any] negative experiences of quality or attitude.' (FGDs, single child, Tbilisi).
'We are very satisfied with the quality and the attitudes and there is no such access barrier.' (FGDs, multiple children, Batumi).

Health professionals
'When a patient is coming to me, I am not letting her go until she is well informed and understands everything. If this person is not satisfied with the quality today she will not come back tomorrow.' (IDIs, gynaecologist, Kutaisi).
'The quality is not universal in the country, but you can choose the doctors and facilities for quality reasons.' (IDIs, maternity house manager, Tbilisi).

Box 4. Statements that indicate affordability problems

Women
'I needed an extra test due to my high-risk pregnancy that was expensive. I had to pay OOP and I needed support from family, otherwise it was not possible.' (FGDs, multiple children, Tbilisi).
'I needed C-section that should be paid OOP and therefore had to change for a cheaper facility.' (FGDs, multiple children, Tbilisi).
'I had complications and I had to pay OOP, they [the state] cover expenses only when it gets extremely dangerous. This is a real access issue for the needed care and makes people to postpone the care until it gets even more serious.' (FGDs, multiple children, Tbilisi)
'Financial barrier in rural areas is a very high barrier to access care (even 8 Euros). Family will always pay for you in Georgia; otherwise you could not access the care you need.' (FGDs, multiple children, Tbilisi).
'I needed a genetic test which costed 800 Euros and I could not do it because it was too much - finance is the access issue for good care.' (FGDs, single child, Tbilisi)
'Pharmaceutical costs were too high for me' (FGDs, multiple children, Kutaisi).

Health professionals
'The financial aspect is very important in Georgia. Salaries are too low, especially in rural areas, and that is the main reason people are postponing care'. (IDIs, gynaecologist, Kutaisi).
'In my facility, the price is high and some women cannot access the care here and have to go somewhere else. Universal coverage only covers basic needs.' (IDIs, maternity house manager, Tbilisi)

Decision-makers
'Providers are charging for additional visits and doing tests that add costs. It can be a burden for vulnerable population groups, such as the poor.' (IDIs, USAID).
'Prescribed medicine could be a barrier for some women.' (IDIs, NCDC director).
'There are some population groups that have covered pharmaceuticals, but the amount is very limited, which creates an access problem.' (IDIs, Health Ministry, Tbilisi).
'Access to maternal care can be a very big burden for families in care of complicated cases and when additional antenatal visits are needed.' (IDIs, Health Ministry, Tbilisi).

Box 5. Statements that indicate there are no affordability problems

Women
'I paid 600 Euros and I was ready for the payment and I am happy with it.' (FGDs, multiple children, Tbilisi)
'I had private insurance and it helped me to pay everything, except pharmaceuticals.' (FGDs, single child, Tbilisi)
'I had a complicated case and I was transferred to Tbilisi region, but the state was covering that completely. This region is well covered by state programs'. (FGDs, multiple children, Batumi).
'It is not often problematic to pay, because it is little we have to contribute and we were already financially prepared.' (FGDs, single child, Batumi).
'My husband and me are working, therefore we do not face financial barriers'. (FGDs, single child, Kutaisi).
'Getting a child is such a happy event that you forget about the costs attached.' (FGDs, multiple children, Kutaisi).

Health professionals
'In general, the government arrangements for pregnant women do a good job. Every woman receives care in 11 weeks of pregnancy, so payment should not be the reason for not accessing care.' (IDIs, gynaecologist, Tbilisi).
'I don't think so [that there are affordability barriers]. We have the law that if a woman is delaying her care then the state program is not supporting her anymore and she has to pay OOP, and in that way, she is stimulated to seek care on time.' (IDIs gynaecologist, Tbilisi).

Decision-makers
'Accessibility has increased since the universal coverage and affordability is an issue to a lesser extent nowadays.' (IDIs, Health Ministry, Tbilisi).

Box 6. Statements that indicate approachability problems

Women

'I experienced poor attitudes and ignorance by healthcare providers.' (FGDs, multiple children, Tbilisi).
'I had some problems and I experienced attitude issues from nurses and doctors.' (FGDs, multiple children, Tbilisi).
'My care was delayed while being in hospital due to ignorant attitudes from healthcare workers when I called them.' (FGDs, multiple children, Tbilisi)
'We sometimes do not understand what doctors mean and have the impression they only want to make their patients confused.' (FGDs, multiple children, Tbilisi)
'There were poor attitudes in my clinic when I needed spinal anaesthesia and I would not go there again.' (FGDs, single child, Tbilisi)
'We experienced poor attitudes from medical staff.' (FGDs, multiple children, Kutaisi).
'There is an educational problem for women related to maternal care use and importance. Also, primary care gynaecologists lack information how to handle consultations.' (FGDs, single child, Tbilisi).
'I don't know about programs covering high-risk women and if we are not informed about different programs we don't know what services we can have.' (FGDs, multiple children, Batumi).
'We had little information about childbirth and breastfeeding, and we only have information from peers and family.' (FGDs, single child, Batumi)

Health professionals

'Poor communication can influence quality of care and when women are unhappy due to poor communication they are not able to share their experiences or problems. Provider attitudes have improved, but are still the most problematic in rural areas' (IDIs, gynaecologist, Tbilisi)
'Yes, it is a problem, especially in rural areas, and their antenatal care-seeking behaviour is delayed. They are missing information about the importance of it.' (IDIs, gynaecologist, Tbilisi)

Decision-makers

'Due to the lack of knowledge, they are often waiting until a critical point, hesitating to go to a doctor and hoping that everything will be OK rather than preventing problems or seeking care at an early stage.' (IDIs, UNICEF, Tbilisi).
'Generally, there is in the country some kind of fear to go to the doctor, because of low trust. People have a problem to understand that prevention is better than cure. Population awareness in the country of what is good quality care is generally low' (IDIs, ministry advisor, Tbilisi.)
'Lack of information and education (especially in rural areas) is a barrier to seek maternal care sufficiently and on time.' (IDIs, NCDC, Tbilisi)
'There could be problematic attitudes from providers and they can influence health outcomes, but they are no reason for not seeking maternal care.' (IDIs, UNICEF, Tbilisi).
'Attitudes and responsiveness of healthcare providers, including the consultation time, is worrisome, which influences the delay in care and safety of women.' (IDIs, NCDC, Tbilisi)

Box 7. Statements that indicate there are no approachability problems

Women

'I knew a good doctor; all my family members went there and I did not experience miscommunication. After I had to start taking medication, doctor checked on me every day and I was very happy with this attitude.' (FGDs, single child, Tbilisi)

'I knew everything about the antenatal visits.' (FGDs, multiple children, Batumi).

'We all thought that care during antenatal and postnatal period is necessary, but postnatal care was not available.' (FGDs, multiple children, Tbilisi).

'I haven't heard of any cultural or religious reasons that could act as barriers to accessing maternal care, at least not for the Georgian population.' (FGDs, single child, Tbilisi).

'We are generally satisfied with the attitudes we encountered from our doctors.' (FGDs, multiple children, Batumi)

Health professionals

'Women don't have problems with poor attitudes, if they are not satisfied, they will go elsewhere. Lacking information is unusual. Ladies are talking with each other. Before coming to receive care, they are already informed that they need care and at least eight visits.' (IDIs, gynaecologist, Kutaisi).

No cultural or religious barriers for institutionalized care. Here natural childbirths are not happening, only in maternity wards.' (IDIs, gynaecologist, Tbilisi)

'All women in Georgia perceive the need to use maternal care sooner or later, and furthermore childbirths are institutionalised.' (IDIs, gynaecologist, Tbilisi).

Decision-makers

'Even if the women are poorly informed during the antenatal and postnatal period, insufficient information is not a barrier to reject the institutionalized maternal care services. Sooner or later the women do use them.' (IDIs, health ministry, Tbilisi).

APPENDICES C – ADDITIONAL INFORMATION FOR CHAPTER 4

Appendix C1: Questionnaire on access to an adequate maternal care in Latvia

- This questionnaire is developed in line with a research project, which is a part of a doctorate dissertation.
- The aim of this questionnaire is to collect data on mother's experience with maternal care in Latvia during the LAST pregnancy, childbirth and postnatal period.
- Women who gave birth in Latvia during the last 4 years (2013 – 2017) are invited to participate.
- The overall aim is to increase the knowledge on this topic and to provide information in order to improve the access to an adequate maternal care in Latvia.
- This research has a pure academic purpose
- All your answers will be kept fully confidential and no personal data (such as name, address, etc.) will be ever disclosed.
- The survey answers are highly important to this study and we hope you will share your experiences by answering all questions in this questionnaire.
- This questionnaire involves several open and close-ended questions focussing on your experiences during your LAST pregnancy, child-birth and postnatal period.
- It is expected that you will need about 30 min to fill in the questionnaire.

Do you agree to participate in this survey? YES/NO

Your current age:

Your education level:

- No education
- Lower than high school
- High school
- Professional degree
- Bachelor level
- Master level
- Higher than Master level

Your place of living (urban or rural area, which province):

When was your last childbirth?

- < 1 year ago
- 1 year ago
- 2 years ago
- 3 years ago
- 4 years ago

Setting of the last childbirth (e.g. home setting/hospital /maternity house/other)

How many children do you have in total?

What is your civil status?

- Single, living alone
- In partnership, living with a partner
- Married, living with the spouse
- Separated, living alone
- Widow, living alone

Which of the following categories correspond to your NET average household income per month, including all sources such as wage, subsidies, remedies, etc.?

- €00 - €250
- €251 - €500
- €501 - €750
- €751 - €1000
- €1001 - €1500
- €1501 - €2000
- €2001 - €3000
- More than €3000

Questions about health of a woman

Here we are going to discuss your health during your LAST pregnancy, childbirth and postnatal period (up to 42 days after the childbirth).

Maternal health = Health of a woman during pregnancy, childbirth and postnatal period.

Maternal care = Healthcare that a woman receives during her pregnancy, childbirth and postnatal period in order to ensure good health and to avoid maternal death and other negative health outcomes.

Maternal care providers= Healthcare providers, which are providing all necessary services related to women's pregnancy, childbirth and postpartum period.

(1) Did you experience any health complications during your LAST pregnancy, childbirth or postnatal period (up to 42 days after birth)?

YES/NO

a. If yes, please list what complications did you experience during pregnancy, childbirth or postnatal period?

1.
2.
3.
4.

(2) Did you have a natural childbirth or C-section section?

C-section section
Natural childbirth

(3) How many times until the childbirth did you receive antenatal check-ups by maternal care provider (e.g. gynaecologist, midwife)? This excludes separate blood tests and visits to other specialists.

(4) How many times did you visit maternal care provider during the postnatal period (up to 42 days after childbirth?

Questions about availability of an adequate maternal healthcare

Here we are going to discuss your experience with the availability of maternal care services that you perceive of ADEQUATE during your LAST maternal period.
ADEQUATE here means:

- Modern medical equipment
- Renovated healthcare facility
- Polite staff with good reputation and skills

Availability of such good quality services reflects:

- Geographical location of the facility (how far you had to travel),
- Opening hours/waiting lists
- Different services and providers that you could/was able to choose from.

ANTENATAL period = time during pregnancy and before child-birth
POSTNATAL period = up to 42 days after the child-birth

(5) Please tell me how available you think the good quality maternal care services were for you during antenatal period, childbirth and postnatal period? (choose only one answer)

Not available
Not always available
Available, but not good quality
Available, with good quality

a. Did you experience any barriers to access maternal care services you needed due to the distance to the institution, transportation infrastructure or time?

YES/NO

- If yes, please explain.

b. Have you experienced any problems with waiting lists, referrals or opening hours of maternal care institutions?

YES/NO

- If yes, please explain.

c. Have you experienced that some maternal care services you needed were not available in the area you live?

YES/NO

- If yes, please explain.

d. Did you experience at any point a shortage of medical staff, which in your opinion can deliver adequate services?

YES/NO

- If yes, please explain.

Questions about the appropriateness of antenatal, childbirth and postnatal services

Further we are going to discuss your experience with the appropriateness of maternal care services.

Appropriateness here refers to:

- Quality of procedures and care delivered by health professionals in terms of their skills and knowledge
- Medical devices, facility maintenance, accommodation and environment.

Antenatal period = time during pregnancy (before birth)

Postnatal period = 42 days after childbirth

(6) In your opinion, how was the quality of maternal care services you received during the antenatal, childbirth and postnatal period? Describe your experience

a. Were you satisfied with the skills of healthcare professionals and conditions at facility?

YES/NO

- Please explain

Questions about affordability of maternal care services (not visible in the survey)

Here we are going to discuss payments you made for maternal care services, including various types of out-of-pocket (OOP) payments, but also indirect payments (e.g. travel costs) that can make the maternal care less affordable and limit access to it.

OOP payments include:

- OFFICIAL cash payments for which one may usually receive a receipt or other document
- INFORMAL cash payments (such as gratitude cash payments or under-the-table cash payments) without receiving a receipt or other document, or gifts in kind for receiving medical services.

OOP payments EXCLUDE monthly payments for health insurance or payments that are later received back from state or health insurer.

(7) Did you receive maternal care in public or private sector?

1= Public 2= Private 3= Mix of Public and Private

(8) Did you have to pay for maternal care services OOP?

YES/NO

a. How much did you spend OOP in total (official + informal) for maternal care services during pregnancy, childbirth and postnatal period?

b. What services did you pay for?

c. Did your household experienced a financial burden in order to pay for maternal care services? (e.g. had to TAKE or BORROW money from family, friends, bank, credit card)

YES/NO

d. Did you make informal payments (sometimes described as 'under-the-table' payments) or gave goods to healthcare providers for their services (in addition to any official fees)?
[Please specify only one option.]

1=	Yes, frequently.
2=	Sometimes/it depends on the services provided, or on the doctor.
3=	No.
4=	I do not know

(9) (Answer only if your answer was 1 or 2): FOR WHAT services did you pay, WHEN did you pay (before, after the service), HOW did you pay (e.g. money, candy), WHAT was the reason for it (e.g. to show gratitude, provider asked/expected, to guarantee the quality of care)?

FOR WHAT:
WHEN:
HOW:
WHY:

(10) During your pregnancy and postnatal period (up to 42 days after birth) how many times you DID NOT VISIT maternal care provider providing any of the necessary services because you could not afford to pay either for the visit or for the transportation/travel?

Questions about attitudes and communication from maternal care provider (not visible in the survey)

Here we are going to discuss attitudes and communication from the side of maternal care provider. Access to an adequate maternal care might be hindered if there is a poor communication, attitude or even discrimination from the healthcare provider. It can result in social distance between healthcare provider and woman and in mistrust towards the healthcare provider.

(11) Were you satisfied with attitude from maternal care providers and with the way they communicated with you?

YES/NO

a. Please explain how were their attitudes and communication towards you and give an example if you can.

b. Did you feel like maternal care providers informed you sufficiently and tried to answer all your questions?

YES/NO

- Please give an example.

Questions about acceptability of maternal care services in Latvia

Here we are going to discuss factors that might have influenced you to accept or refuse the need for maternal care services, such as health literacy, family traditions as well as culture and gender norms. It also refers to general awareness regarding the necessary care and the information distributed regarding services and treatments.

(12) Did you think it is important to receive maternal healthcare services during antenatal period, childbirth and postnatal period?

YES/NO

a. Please explain WHY it is important and whether there are services that you think are unnecessary

(13) How informed do you think you were and what were your information sources about care in maternal period and about maternal care services?

a. Did you feel like you were missing any information during the maternal period?
YES/NO

(14) Please list here if there were any cultural, religious, gender relationship or family tradition reasons that were for you a barrier to receive adequate maternal care services

Questions about general satisfaction of the maternal care services

(15) Overall, were you satisfied with the services received during maternal period?
YES/NO

(16) Do you have anything else you would like to add?

Appendix C2: In-depth interview guide

Below is a general guide for leading the in-depth interviews. This guide may be slightly modified as needed, but without changing the content of the questions. During the interview, additional clarifying questions can be posed. Before the interview starts, participant is provided with a verbal informed consent.

I. INTRODUCTION & INFORMED CONSENT (5 MIN)

- **Thank the respondent and introduce yourself.** Thank you for accepting our invitation for this interview. Your participation is highly important to us. Let me first present myself: ... The interview should last about 1 hour.

- **Explain the general purpose of the interview.** The questions prepared for this interview concern your opinion and attitudes related to access to an adequate maternal care in Latvia. This interview and similar interviews with decision-makers and healthcare providers are carried out for a doctoral dissertation focused on the barriers to access a good quality maternal care in Central Eastern European countries. Results of these interviews will be demonstrated in a study with purely scientific objectives. The study aims to increase the knowledge and insights on this topic and to provide this information to improve the access to an adequate maternal care in the Central Eastern Europe.

- **Explain the process of the interview.** There will be several main questions during the interview while additional clarifying questions can be posed.

- **Address the issue of confidentiality.** Information discussed is going to be analysed as a whole and respondent's personal details will be kept completely confidential and anonymous.

- **Explain the presence and purpose of recording equipment and introduce observers.** I will need to tape record the discussion because I would not want to miss any of your comments. No one outside of this room will have access to these tapes.

- **Ask the respondent to give the Informed Consent.** If you wish, interview transcripts can be shared with you, because including the information in the study, so you can check whether there is no misinterpreted information. Do you agree to participate in this interview?

- **Make sure that the respondent is ready to start.** Do you have any questions? May we turn on the tape recorder?

II. MAIN QUESTIONS (50 min)

Elicit opinion about availability of an adequate maternal care services in Latvia

Here we are going to discuss availability of maternal care services that you perceive of good quality. Availability reflects the geographical location, distribution and number of healthcare facilities, their opening hours, as well as the services and providers that the service users (childbearing women in our case) can choose from.

(1) Please tell me how available maternal care services are during antenatal period, childbirth or postnatal period

Think about:
- certain services/devices/medicines - medical staff delivering adequate services - geographical distance to facility - Transportation infrastructure (ability to reach the care in need) - Waiting lists and referrals

(2) How do you think the current situation of maternal care availability in Latvia influences health outcomes of the mothers and their babies?

Elicit opinion about the appropriateness of maternal care services in Latvia

Here we are going to discuss the perceived quality of maternal care services in terms of provider knowledge and skills (quality of procedures and care delivered by health professionals. Other aspects of appropriateness refer to medical devices, facility maintenance, accommodation and environmental aspects.

(3) In your opinion, what is the quality of maternal care in Latvia women receive during antenatal period, childbirth and postnatal period irrespective to their socio-economic status or health condition?

Think about:
a. Skills of and the methods and technologies used by healthcare professionals b. social aspects and cleanness/conditions in facilities

(4) How do you think the current level of maternal care services quality in Latvia influences care-seeking behaviour of women and health outcomes of the women and their babies?

Elicit opinion about affordability of maternal care services in Latvia

Here we are going to discuss payments made by the service user (childbearing women), including various types of OOP payments, but also indirect payments (e.g. travel costs) related to maternal care services families and women face in the maternal period.

(5) What maternal care services do women pay for and how much do they cost?
(6) What do you think about the payment for good quality maternal care services and what is the difference between public and private sector?

Think about:
a. Payment among poor population groups
b. Payment for pregnancies with complications
c. Costs in public versus private system

(7) Would your country's childbearing women be expected to make unofficial payments [sometimes described as 'under-the-table' payments] to doctors for their services (in addition to any official co-payment of appointment fees)?
   a. in case positive: What is the reason for it? (e.g. gratitude, quality)

(8) How do you think the current level of payment for an adequate maternal care in Latvia influences care seeking behaviour and health outcomes of women and their babies?

Elicit opinion about maternal care provider attitude and communication aspect in Latvia

Here we are going to discuss attitudes and communication from the side of maternal care provider. It refers to the psychological dimension of access to maternal care, which might be hindered by poor communication or attitude from the side of provider, resulting in social distance and mistrust in those providers, and even by discrimination on the side of healthcare staff.

(9) What can you tell me about the attitudes from maternal care providers towards women?
   a. Is there a difference between public and private sector?

(10) How do maternal care providers interact with women?

Think about:
a. taking the time to inform women well and answer their questions
b. physician-patient communication

(11) How do you think the attitude and communication of maternal care providers in Latvia influence health outcomes of women and their babies?

Elicit opinion about acceptance of maternal care services in Latvia

Here we are going to discuss factors that influence childbearing women to accept or refuse the need for maternal care services, such as education, culture, traditions and gender norms. It also refers to awareness of service availability among service users, as well as to the information distributed regarding available treatments and services.

(12) How do you think women perceive the need for maternal healthcare services in Latvia and by what factors is it influenced?

Think about:
- Culture; Traditions; Gender norms
- Education, literacy

(13) What do you think about education and health literacy about maternal care services and the appropriate use of them?

Think about:
a. School curriculum
b. Women living in rural vs. urban areas
c. Information from social network and family

(14) How do you think the current level of maternal care acceptance and general health literacy in Latvia influences health outcomes of women and their babies?

Elicit opinion about the use of guidelines for maternal health services in Latvia

I would like to discuss guidelines for maternal care services in Latvia.

(15) What guidelines are there for maternal care providers and when are they used?
(16) How up to date are these guidelines available and how to access them?
(17) Are patient groups involved in developing such guidelines? How?
(18) How is the use of them controlled?

Elicit opinion about the registry of maternal deaths in Latvia

Lastly, I would like to discuss with you how maternal deaths are registered on Latvia and what is the current situation.

(19) Can you explain how maternal deaths are registered in Latvia?
(20) How accurate do you think the maternal deaths are classified, registered and reported?

III. CLOSING PART (5 MIN)

- **Ask respondent if there is anything to add.** These were all questions I wanted to discuss with you. Do you have anything to add with respect to this topic?

- **Thank the respondent. This is the end of the interview.** Thank you very much for your input. Your opinion is highly valuable for our study.

- **Explain once again what will happen with the information collected** As I mentioned at the beginning, our study has purely academic purposes. No one outside of this room will have access to these tapes. The information will be analysed as a whole and your personal details will never be presented.

Appendix C3: Socio-demographic characteristics comparison between included and excluded women-participant samples

Women-participants' socio-demographic characteristics comparison				
		Included (50)	**Excluded (572)**	**Difference in means**
Age in years	18-47 years	Mean: 28.48	Mean: 29.83	p=0.081[a]
Education level	Lower than high school High school Professional degree Bachelor's degree Master's degree & higher	1 10 16 19 4	13 95 106 229 129	p=0.015[b]
Children	1 2 3 More than 3	25 19 5 1	277 207 74 14	p=0.694[b]
Civil status	Living with partner/spouse Living alone	48 2	552 20	p=0.694[c]
Household income	Up to €500 €501 - €1500 €1501 - €3000 More than €3000	7 34 8 1	60 332 156 21	p=0.054[b]
Last childbirth	1 year ago, or less 2-3 years ago 4 years ago	34 16 0	356 190 22	p=0.375[b]

[a] Independent sample t-test
[b] Mann_Whitney U test
[c] Fisher's exact test

APPENDICES D – ADDITIONAL INFORMATION FOR CHAPTER 5

Appendix D1. Questionnaire on barriers to access good quality maternal care in Bulgaria, Moldova and Romania

- This questionnaire is developed in line with a research project, which is a part of a doctorate dissertation.
- The aim of this questionnaire is to collect data on mother's experience with maternal care in (country) during the LAST pregnancy, childbirth and postnatal period.
- Women who gave birth in (country) during the last 4 years (month/year – month/year) are invited to participate.
- The overall aim is to increase the knowledge on this topic and to provide information in order to improve the access to an adequate maternal care in (country).
- This research has a pure academic purpose.
- All your answers will be kept fully confidential and no personal data (such as name, address, etc.) will be ever disclosed.
- The survey answers are highly important to this study and we hope you will share your experiences by answering all questions in this questionnaire.
- This questionnaire involves several close-ended questions focussing on your experiences during your LAST pregnancy, child-birth and postnatal period.
- Questions are related to availability, appropriateness, affordability, approachability and acceptability of maternal care services.
- It is expected that you will need about 20 min. to fill in the questionnaire.

Do you agree to participate in this survey?	YES/NO

Your current age:

Insert number:

Your education level:

Primary education
Lower secondary education
Upper secondary education
Post-secondary non-tertiary education
Short-cycle tertiary education
Bachelor or equivalent
Master or equivalent
Doctoral or equivalent

Your place of living (urban or rural area, name of province):

When was your last childbirth?

- < 1 year ago
- 1 year ago
- 2 years ago
- 3 years ago
- 4 years ago

Setting of the last childbirth:

- Home childbirth
- General hospital
- Maternity house
- Other

How many children do you have in total?

- 1
- 2
- 3
- 4
- More than 4

What is your civil status?

- Single, living alone
- In partnership, living with a partner
- Married, living with the spouse
- Separated, living alone
- Widow, living alone

Which of the following categories correspond to your NET average household income per month, including all sources such as wage, subsidies, remedies, etc.?

€00 - €250
€251 - €500
€501 - €750
€751 - €1000
€1001 - €1500
€1501 - €2000
€2001 - €3000
More than €3000

Questions about health of a woman

Here we are going to discuss your health during your LAST pregnancy, childbirth and postnatal period (up to 42 days after the childbirth).

Maternal health = Health of a woman during pregnancy, childbirth and postnatal period.

Maternal care = Healthcare that a woman receives during her pregnancy, childbirth and postnatal period in order to ensure good health and to avoid maternal death and other negative health outcomes.

Maternal care providers= Healthcare providers, which are providing all necessary services related to women's pregnancy, childbirth and postpartum period.

(17) Did you experience any health complications during your LAST pregnancy, childbirth or postnatal period (up to 42 days after birth)?

YES/NO

a. If answered with yes, when did you experience the complications? (multiple answers possible)

1. Problems/complications existed already before the pregnancy
2. Complications occurred during pregnancy
3. Complications occurred during childbirth
4. Complications occurred during postnatal period

(18) Did you have a natural childbirth or C-section section?

C-section section
Natural childbirth

(19) How many times until the childbirth did you receive antenatal check-ups by maternal care provider (e.g. gynaecologist, midwife)? This excludes separate blood tests and visits to other specialists.

0
1-4
5-6
7-8
9-10
11-12
More than 12

(20) How many times did you visit maternal care provider during the postnatal period (up to 42 days after childbirth?

0
1
2
3
4
More than 4

Questions about availability of adequate of antenatal, childbirth and postnatal care services.

Here we are going to discuss your experience with the availability of maternal care services that you perceive of GOOD QUALITY during your LAST maternal period.

GOOD QUALITY here means:

- Modern medical equipment
- Renovated healthcare facility
- Polite staff with good reputation and skills

Availability of such good quality services reflects:

- Geographical location of the facility (how far you had to travel),
- Opening hours/waiting lists
- Different services and providers that you could/was able to choose from.

ANTENATAL period = time during pregnancy and before child-birth
POSTNATAL period = up to 42 days after the child-birth

(21) Please tell me how available you think the good quality maternal care services were for you during antenatal period, childbirth and postnatal period? (choose only one answer in each section)

Antenatal care:
Not available
Not always available
Available, but not good quality
Available, with good quality
Childbirth services:
Not available
Not always available
Available, but not good quality
Available, with good quality
Postnatal care:
Not available
Not always available
Available, but not good quality
Available, with good quality

a. Did you experience any barriers to access maternal care services you needed due to the distance to the institution, transportation infrastructure or travel time?

YES/NO

- If answered with yes, please indicate which barrier(s) you experienced (multiple answers possible).

Travel time was more than 40 min one way
Travel distance was more than 50 km one way
Limited or no access by public transport

b. Have you experienced any problems with waiting lists, referrals or opening hours of maternal care institutions?

YES/NO

- If answered with yes, please indicate which barriers you experienced (multiple answers possible).

Limited working hours at facilities
Long waiting lists
Problems related to referrals

c. Have you experienced that certain maternal care services you needed were not available in the area you live?

YES/NO

- If answered with yes, please indicate which services were not available (multiple answers possible).

USG
Childbirth services
Postnatal care
Gynaecologist
Other specialists
Maternal courses
Other

d. Did you experience at any point a shortage of medical staff, which in your opinion can deliver adequate services?

YES/NO

- If answered with yes, please indicate what shortage was there (multiple answers possible).

Enough staff, but not adequate quality services
Shortage of gynaecologists
Shortage or midwives
Shortage of medical assistants
Shortage of administrative staff

Questions about the appropriateness of antenatal, childbirth and postnatal care services.

Further we are going to discuss your experience with the quality of maternal care services.

Quality here refers to:

- Quality of procedures and care delivered by health professionals
- Facility maintenance, accommodation and environment.

Antenatal period = time during pregnancy (before birth)

Postnatal period = 42 days after childbirth

(22) In your opinion, how satisfied you were with the **quality of maternal care services** you received during the antenatal, childbirth and postnatal period? Select one of the provided options in each section below.

Antenatal care: 1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied
Childbirth services: 1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied
Postnatal care: 1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied

a. Were you satisfied with the skills of healthcare professionals?

Antenatal care: YES/NO Childbirth care: YES/NO Postnatal care: YES/NO

- If answered with no at least one time, please indicate what was unsatisfactory (multiple answers possible).

Lack of/ inconsistent information provided
Lack of medical attendance
Disrespectful verbal behaviour
Disrespectful physical behaviour
Lack of knowledge
Inattentive & inaccurate medical staff (e.g. do not notice important things)

b. Were you satisfied with the conditions at facilities?

YES/NO

- If answered with no, please indicate which conditions were unsatisfactory (multiple answers possible).

Substandard bathrooms/toilets
Substandard facilities at childbirth unit
Substandard facilities at antenatal care unit
Substandard facilities at postnatal care unit

Questions about affordability of antenatal, childbirth and postnatal care services.

Here we are going to discuss payments you made for maternal care services, including various types of out-of-pocket (OOP) payments, but also indirect payments (e.g. travel costs) that can make the maternal care less affordable and limit access to it.

OOP payments include:

- OFFICIAL cash payments for which one may usually receive a receipt or other document
- INFORMAL cash payments (such as gratitude cash payments or under-the-table cash payments) without receiving a receipt or other document, or gifts in kind for receiving medical services.

OOP payments EXLCLUDE monthly payments for health insurance or payments that are later received back from state or health insurer.

(23) Did you receive maternal care in public or private sector?

1= Public
2= Private
3= Mix of Public and Private

(8) Did you ever use your personal "connections" during pregnancy, childbirth or postnatal period to receive services of better quality or have faster access?

YES/NO

- If answered with yes, please indicate what you used the connections for (multiple answers possible).

Timely/faster access to services
Extra services
Better attitude
To secure/improve quality of services
Other

(9) Did you have to pay for maternal care services OOP?

YES/NO

a. How much did you spend OOP in total (official + informal payments) for maternal care services during pregnancy, childbirth and postnatal period?

Insert number:_____

b. What services did you pay for? (multiple answers possible)

Antenatal check-ups
Visit to other specialists
Medications
USG
Blood tests
Childbirth
Anaesthetics
Hospital bed
Postnatal care
Increased comfort
Travel expenses
Other

c. Did your household experience a financial burden in order to pay for maternal care services? (e.g. had to TAKE or BORROW money from family, friends, bank, credit card)

YES/NO

d. Did you make informal payments (sometimes described as 'under-the-table' payments) or gave goods to healthcare providers for their services (in addition to any official fees)?
[Please choose only one option.]

1= Yes, frequently.
2= Sometimes/it depends on the services provided, or on the doctor.
3= No.
4= I do not know

(10) (Answer only if your answer was "1= Yes, frequently "or "2= Sometimes/it depends on the services provided, or on the doctor"):

- FOR WHAT services did you pay?
- WHEN did you pay (before , after the service)?
- HOW did you pay(e.g. money, gifts)?
- WHAT was the reason for providing this payment/gift?

FOR WHAT:
Antenatal care
Childbirth care
Postnatal care
Other
_____
WHEN:
Before service
After service
During service
_____
HOW:
In cash
In kind (gifts)
_____
WHY:
As a gratitude
To receive better attitude
To receive better quality care
To support medical staff
Other

(11) During your pregnancy and postnatal period (up to 42 days after birth) how many times you DID NOT VISIT maternal care provider providing any of the necessary services, because you could not afford to pay either for the visit or for travel expenses?

Insert number:_____

Questions about approachability of antenatal, childbirth and postnatal care services.

Here we are going to discuss attitudes and communication from the side of maternal care provider. Access to an adequate maternal care might be hindered if there is a poor communication, attitude or even discrimination from the healthcare provider. It can result in social distance between healthcare provider and woman and in mistrust towards the healthcare provider.

(12) How satisfied were you with attitude from maternal care providers and with the way they communicated with you?

Antenatal care: 1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied
Childbirth services: 1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied
Postnatal care: 1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied

If answered with "4 = dissatisfied" or "5 = very dissatisfied, please indicate how was the attitude and communication you experiences (multiple answers possible)

Disrespectful/rude verbal communication
Unwilling/unable to provide answers on questions
No or little explanations and information provided
Negative attitude
Other

e. Did you feel like maternal care providers informed you sufficiently and tried to answer all your questions?

Antenatal care: YES/NO
Childbirth: YES/NO
Postnatal care: YES/NO

Questions about acceptability of antenatal, childbirth and postnatal care services.

Here we are going to discuss factors that might have influenced you to accept or refuse the need for maternal care services, such as health literacy, family traditions as well as culture and gender norms. It also refers to general awareness regarding the necessary care and the information distributed regarding services and treatments.

(13) Did you think it is important to receive maternal healthcare services during antenatal period, childbirth and postnatal period?

Antenatal care: YES/NO
Childbirth: YES/NO
Postnatal care: YES/NO

(14) How informed do you think you were about care in maternal period and about maternal care services?

Very well informed
Well informed
Somewhat informed
Poorly informed
Not informed

(15) What were your information sources about care in maternal period and about maternal care services? (multiple answers possible).

Health professionals
Courses
Personal social network
(online) reading materials

(16) Please indicate if there were any cultural, religious, gender relationship or family tradition reasons that were for you a reason why not to seek for/receive adequate maternal care services during pregnancy, childbirth and postnatal period. (multiple answers possible)

Cultural
Religious
Gender relationship
Family traditions
Personal believes

Questions about general satisfaction of antenatal, childbirth and postnatal care services.

(17) Overall, were you satisfied with the services received during maternal period?

YES/NO

(18) Do you have anything else you would like to add?

Appendix D2. Availability of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376). Logistic regression

	Availability								
	Experienced access barriers due to time, transport, distance			Experienced access barriers due to waiting lists, referrals or opening hours			Experienced shortage of staff providing adequate maternal care		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]
Health complications in maternal period	1.852(1.423-2.412)	1.744(1.473-2.064)	1.389(.838-2.303)	1.663(1.328-2.083)	1.615(1.381-1.888)	1.574(1.012-2.447)	1.926(1.573-2.358)	1.922(1.676-2.204)	1.842(1.162-2.920)
Giving birth in private facility	1.844(1.074-3.165)	1.274(1.038-1.563)	1.042(.458-2.371)	.513(.313-.841)	1.059(.878-1.277)	.808(.339-1.636)	.627(.415-.946)	.522(.441-.618)	.569(.276-1.174)
Giving caesarean birth	.888(.681-1.157)	1.138(.968-1.339)	.651(.326-1.297)	.970(.776-1.212)	.938(.810-1.087)	1.000(.581-1.722)	1.110(.910-1.352)	1.049(.924-1.190)	1.372(.779-2.417)
Number of antenatal visits	.919(.857-.985)	.937(.893-.983)	1.006(.863-1.174)	.914(.862-.970)	.945(.904-.988)	1.017(.890-1.161)	.862(.818-.908)	.919(.885-.955)	.870(.759-.998)
Number of postnatal visits	.940(.878-1.007)	.905(.849-.964)	.961(.828-1.114)	.965(.911-1.022)	.871(.821-.924)	.894(.788-1.015)	.983(.934-1.034)	.866(.824-.910)	.924(.812-1.052)
Public and private sector of care reception	1.029(.769-1.378)	1.404(1.150-1.716)	-	1.261(.994-1.602)	1.673(1.398-2.002)	-	1.198(.967-1.483)	1.450(1.252-1.679)	-
Private sector of care reception	.823(.494-1.371)	1.413(1.089-1.833)	-	1.127(.743-1.710)	1.372(1.079-1.746)	-	1.097(.758-1.588)	1.009(.820-1.242)	-
Sector of care reception in Moldova	-	-	1.340(.701-2.561)	-	-	.846(.482-1.486)	-	-	1.094(.611-1.960)
Nagelkerke R square	.058	0.042	.081	.066	.039	.046	.085	.084	.100
Model significance	p=.000	p=.000	p=.046	p=.000	p=.000	p=.351	p=.000	p=.000	p=.004

[a] = aOR is adjusted for age at childbirth, education level, civil status, household income, number of children and the time of last childbirth.

Appendix D3. Appropriateness of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376). Logistic regression.

	Appropriateness					
	Satisfied with maternal care provider skills (antenatal period)			Satisfied with maternal care provider skills (childbirth)		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]
Health complications in maternal period	.397(.297-.531)	.462(.386-.553)	.750(.458-1.226)	.473(.358-.626)	.484(.398-.588	.359(.186-.691)
Giving birth in private facility	1.350(.701-2.602)	1.448(1.141-1.837)	1.930(.826-4.510)	3.164(1.585-6.314	1.808(1.374-2.378)	1.432(.391-5.250)
Giving caesarean birth	1.001(.745-1.345)	.929(.780-1.105)	1.263(.669-2.387)	1.581(1.200-2.084)	1.741(1.439-2.106)	.807(.349-1.868)
Number of antenatal visits	1.296(1.198-1.402)	1.228(1.167-1.291)	1.067(.914-1.245)	1.218(1.130-1.312)	1.114(1.054-1.178)	1.123(.904-1.395)
Number of postnatal visits	1.001(.929-1.079)	1.311(1.214-1.415)	1.028(.890-1.187)	1.046(.973-1.123)	1.124(1.043-1.212)	1.077(.882-1.314)
Public and private sector of care reception	1.040(.756-1.429)	.847(.694-1.033)	-	.892(.662-1.202)	.980(.795-1.208)	-
Private sector of care reception	1.159(.669-2.009)	.983(.739-1.306)	-	.778(.474-1.279)	1.088(.795-1.489)	-
Sector of care reception in Moldova	-	-	.751(.403-1.399)	-	-	1.824(.668-4.983)
Nagelkerke R square	.123	.086	.037	.115	.072	.106
Model significance	p=.000	p=.000	p=.651	p=.000	p=.000	p=.043
	Satisfied with maternal care provider skills (postnatal period)			Satisfied with conditions and equipment at maternal care facilities		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a])	Moldova aOR(95% CI)[a]
Health complications in maternal period	.622(.498-.778)	.589(.514-.675)	.476(.297-.765)	.766(.618-.949)	.759(.654-.881)	.849(.532-1.355)
Giving birth in private facility	1.773(1.082-2.904)	2.045(1.736-2.409)	2.422(1.028-5.705)	13.246(6.761-25.952)	16.258(12.889-20.507)	5.967(2.391-14.891)
Giving caesarean birth	.973(.781-1.212)	1.084(.960-1.226)	1.536(.829-2.848)	1.120(.912-1.377)	1.155(1.010-1.320)	1.021(.568-1.836)
Number of antenatal visits	1.193(1.125-1.265)	1.058(1.019-1.099)	1.070(.925-1.239)	1.124(1.063-1.188)	1.011(.971-1.054)	1.047(.908-1.207)
Number of postnatal visits	1.066(1.007-1.128)	1.357(1.291-1.426)	1.280(1.110-1.476)	.977(.926-1.031)	1.069(1.017-1.124)	1.010(.885-1.153)
Public and private sector of care reception	.837(.663-1.058)	.927(.803-1.069)	-	.772(.621-.959)	.897(.776-1.1.037)	-
Private sector of care reception	1.195(.782-1.827)	1.076(.881-1.313)	-	.887(.599-1.314)	1.076(.856-1.353	-
Sector of care reception in Moldova	-	-	1.408(.765-2.592)	-	-	2.218(1.236-3.978)
Nagelkerke R square	.086	.102	.153	.152	.323	.191
Model significance	p=.000	p=.000	p=.000	p=.000	p=.000	p=.000

[a] = aOR is adjusted for age at childbirth, education level, civil status, household income, number of children and the time of last childbirth.

Appendix D4. Affordability of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376). Logistic regression.

	Affordability					
	Paid OOP			Experienced financial burden		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]
Health complications in maternal period	1.280(1.025-1.598)	1.562(1.302-1.874)	1.490(.829-2.677)	1.668(1.352-2.057)	1.826(1.588-2.099)	1.168(.663-2.057)
Giving birth in private facility	.220(.145-.331)	2.458(1.918-3.150)	.087(.036-.210)	1.274(.834-1.948)	1.298(1.100-1.532)	1.345(.520-3.479)
Giving caesarean birth	1.308(1.059-1.616)	1.302(1.117-1.518)	.391(.201-.761)	1.254(1.021-1.539)	1.365(1.199-1.553)	1.136(.558-2.312)
Number of antenatal visits	.963(.911-1.019)	1.042(.994-1.091)	1.097(.922-1.305)	.956(.906-1.0089)	.998(.960-1.039)	.894(.751-1.065)
Number of postnatal visits	1.002(.950-1.058)	.928(,876-.983)	.849(.720-1.000)	1.005(.954-1.059)	.962(.916-1.010)	.905(.766-1.068)
Public and private sector of care reception	1.804(1.419-2.294)	3.785(3.169-4.521)	-	1.085(.869-1.356)	1.588(1.357-1.859)	-
Private sector of care reception	.963(.659-1.406)	2.225(1.730-2.862)	-	1.331(.904-1.961)	1.593(1.294-1.961)	-
Sector of care reception in Moldova	-	-	1.297(.598-2.810)	-	-	.968(.459-2.041)
Nagelkerke R square	.153	.229	.270	.109	.116	.188
Model significance	p=.000	p=.000	p=.000	p=.000	p=.000	p=.000
	Provided informal payment			Used personal connections		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a])	**Moldova aOR(95% CI)[a]**
Health complications in maternal period	1.376(1.085-1.746)	1.236(1.080-1.414)	1.387(.723-2.661)	1.185(.963-1.457)	1.228(1.075-1.404)	1.780(1.073-2.950)
Giving birth in private facility	.046(.027-.076)	.366(.311-.430)	.081(.034-.196)	.196(.122-.315)	.459(.390-.541)	.164(.075-.358)
Giving caesarean birth	1.351(1.081-1.689)	1.261(1.117-1.424)	.381(.183-.790)	1.297(1.059-1.589)	1.423(1.259-1.608)	.505(.278-.917)
Number of antenatal visits	.935(.880-.992)	.993(.957-1.031)	.899(.748-1.081)	.985(.933-1.039)	.984(.948-1.022)	1.104(.949-1.285)
Number of postnatal visits	1.004(.948-1.064)	.979(.935-1.024)	1.008(.835-1.217)	.992(.942-1.046)	1.024(.978-1.071)	1.026(.889-1.185)
Public and private sector of care reception	1.359(1.067-1.730)	1.502(1.303-1.733)	-	1.397(1.130-1.726)	1.326(1.150-1.529)	-
Private sector of care reception	1.088(.719-1.647)	1.184(.973-1.440)	-	1.105(.752-1.624)	1.070(.878-1.305)	-
Sector of care reception in Moldova	-	-	.717(.319-1.610)	-	-	.922(.492-1.728)
Nagelkerke R square	.304	.085	.325	.094	.068	.199
Model significance	p=.000	p=.000	p=.000	p=.000	p=.000	p=.000

[a] = aOR is adjusted for age at childbirth, education level, civil status, household income, number of children and the time of last childbirth.

Appendix D5. Approachability of maternal care in Romania (N=2018), Bulgaria (N=4951) and Moldova (N=376). Logistic regression.

	Approachability								
	Satisfied with provider attitude and communication (antenatal period)			Satisfied with provider attitude and communication (childbirth)			Satisfied with provider attitude and communication (postnatal period)		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]
Health complications in maternal period	.522(.397-.685)	.576(.496-.669)	.754(.468-1.215)	.496(.374-.659)	.634(.542-.742)	.696(.383-1.265)	.554(.439-.699)	.605(.525-698)	.536(.334-.859)
Giving birth in private facility	1.367(.714-2.618)	1.549(1.280-1.875)	1.888(.818-4.354)	1.517(.811-2.837)	1.767(1.444-2.162)	3.343(.881-12.689)	2.660(1.569-4.511)	2.317(1.960-2739)	2.130(.926-4.901)
Giving caesarean birth	1.108(.845-1.453)	1.001(.871-1.150)	.763(.420-1.384)	1.493(1.125-1.982)	1.226(1.060-1.417)	.892(.407-1.953)	1.057(.841-1.330)	1.104(.972-1.253)	1.469(.806-2.676)
Number of antenatal visits	1.233(1.147-1.325)	1.188(1.140-1.238)	1.256(1.072-1.472)	1.182(1.096-1.274)	1.089(1.042-1.138)	1.113(.916-1.353)	1.232(1.158-1.310)	1.061(1.020-1.103)	1.200(1.033-1.394)
Number of postnatal visits	1.068(.995-1.145)	1.181(1.117-1.250)	1.067(.929-1.227)	1.012(.940-1.088)	1.173(1.108-1.243)	1.026(.864-1.219)	1.042(.982-1.105)	1.371(1.304-1.442)	1.187(1.035-1.362)
Public and private sector of care reception	1.132(.847-1.514)	.923(.788-1.083)	-	1.050(.771-1.430)	.944(.801-1.112)	-	.869(.681-1.111)	.891(.768-1.035)	-
Private sector of care reception	1.753(1.011-3.042)	1.200(.953-1.510)	-	1.013(.600-1.710)	1.293(1.012-1.652)	-	.870(.568-1.335)	1.152(.937-1.416)	-
Sector of care reception in Moldova	-	-	1.025(.554-1.895)	-	-	1.031(.467-2.279)	-		1.864(1.014-3.424)
Nagelkerke R square	.117	.080	.085	.077	.078	.088	.099	.127	.149
Model significance	P=.000	P=.000	P=.026	P=.000	P=.000	P=.073	P=.000	P=.000	P=.000

	Providers informed sufficiently (antenatal period)			Providers informed sufficiently (childbirth)			Providers informed sufficiently (postnatal period)		
	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]	Romania aOR(95% CI)[a]	Bulgaria aOR(95% CI)[a]	Moldova aOR(95% CI)[a]
Health complications in maternal period	.615(.482-.785)	.604(.516-.706)	.792(.496-1.265)	.515(.408-.650)	.581(.500-.676)	.543(.328-.899)	.605(.490-.747)	.607(.529-.697)	.583(.368-.925)
Giving birth in private facility	1.651(.941-2.899)	1.144(.942-1.391)	1.725(.795-3.742)	3.009(1.779-5.089)	1.543(1.273-1.870)	2.267(.922-5.578)	2.850(1.798-4.517)	1.972(1.675-2.321)	2.915(1.320-6.435)
Giving caesarean birth	.933(.732-1.188)	.920(.795-1.066)	.927(.515-1.670)	1.166(.926-1.469)	1.156(1.005-1.331)	1.027(.534-1.975)	.873(.709-1.076)	1.159(1.025-1.310)	1.054(.589-1.887)
Number of antenatal visits	1.246(1.168-1.328)	1.196(1.146-1.249)	1.132(.974-1.315)	1.190(1.119-1.265)	1.087(1.041-1.134)	1.096(.931-1.291)	1.199(1.135-1.267)	1.066(1.027-1.107)	1.030(.893-1.189)
Number of postnatal visits	1.041(.979-1.107)	1.240(1.166-1.319)	1.122(.977-1.288)	1.060(.999-1.125)	1.222(1.153-1.295)	.987(.852-1.143)	1.059(1.004-1.118)	1.399(1.331-1.471)	1.267(1.104-1.454)
Public and private sector of care reception	1.111(.858-1.438)	.869(.733-1.030)	-	.754(.589-.965)	.897(.764-1.053)	-	.798(.639-.995)	.915(.792-1.057)	-
Private sector of care reception	1.518(.947-2.431)	1.105(.869-1.405)	-	.699(.460-1.061)	1.262(.998-1.596)	-	.905(.613-1.335)	1.116(.914-1.362)	-
Sector of care reception in Moldova	-	-	.638(.353-1.153)	-	-	.918(.478-1.760)	-	-	.964(.535-1.738)
Nagelkerke R square	.114	.064	.046	.123	.065	.067	.106	.114	.117
Model significance	p=.000	p=.000	p=.399	p=.000	p=.000	p=.147	p=.000	p=.000	p=.001

[a] = aOR is adjusted for age at childbirth, education level, civil status, household income, number of children and the time of last childbirth.

APPENDICES E – ADDITIONAL INFORMATION FOR CHAPTER 6

Appendix E1. Covariate balance sheet summary before and after matching using function "tebalance summarize" in SATAâ

1. How much did you pay into charitable funds?

	Raw	Matched
Number of obs =	884	1,768
Treated obs =	304	884
Control obs =	580	884

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.2258071	.0517736	1.128533	1.030212
new_urgent_un~n	.0612402	-.0299359	1.625194	.7718802
new_educ1	.0055922	.0169621	1.041485	1.130725
new_educ2	.1320692	.0506577	1.221941	1.078003
new_educ3	-.1874723	-.0157395	.6812044	.9699528
new_educ4	-.20605	-.0127874	.7926953	.9865689
new_educ5	.0162439	.0096101	1.06345	1.036721
tp_ar	-.0580655	-.0304185	.9746191	.9839545
age_gr	-.4728333	-.2242745	1.167346	1.084967
new_wealth1	-.1900882	-.0248025	.5384535	.9268232
new_wealth3	.2086839	.0323536	1.085301	1.013717
new_wealth6	-.1120941	-.0494088	.4571032	.7048611

2. How much did you pay at the cash desk?

	Raw	Matched
Number of obs =	869	1,738
Treated obs =	298	869
Control obs =	571	869

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1982647	.0360576	1.113616	1.022109
new_urgent_un~n	.1004114	0	2.209681	1
new_educ1	.006251	.0084268	1.045904	1.061254
new_educ2	.1277528	.0486122	1.21159	1.074485
new_educ3	-.1635684	-.0031798	.7186892	.9939449
new_educ4	-.2032935	-.0209451	.7920073	.9774729
new_educ5	.018599	.00501	1.074558	1.01959
tp_ar	-.0621802	-.0549172	.9732415	.9700006
age_gr	-.4727638	-.2556375	1.14298	1.081199
new_wealth1	-.1851163	-.0338127	.5492694	.9008669
new_wealth3	.1773787	.0234732	1.069559	1.009589
new_wealth6	-.0700628	.0084268	.5961671	1.061254

3. How much did you pay informally?

	Raw	Matched
Number of obs =	818	1,636
Treated obs =	270	818
Control obs =	548	818

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.2119729	.0703852	1.096648	1.034234
new_urgent_un~n	.0719994	-.0311356	1.726282	.7720975
new_educ1	.0022056	.0171293	1.016391	1.122195
new_educ2	.2155381	.045326	1.364408	1.06821
new_educ3	-.2000156	-.0170628	.6593539	.9672562
new_educ4	-.2081128	-.013827	.7881435	.9854439
new_educ5	-.0275454	.0103969	.9033192	1.039849
tp_ar	.030488	-.0177042	1.016428	.990585
age_gr	-.4783486	-.2999694	1.153873	1.09764
new_wealth1	-.1696545	-.0306758	.5901759	.9126046
new_wealth3	.1697258	.052278	1.06909	1.020403
new_wealth6	-.0762832	-.0565415	.5873868	.6519057

4. Did you pay informally?

	Raw	Matched
Number of obs =	1,040	2,080
Treated obs =	362	1,040
Control obs =	678	1,040

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.2069418	.0641197	1.117335	1.038271
new_urgent_un~n	.0478303	-.0161223	1.449641	.876709
new_educ1	.0100184	0	1.070039	1
new_educ2	.123517	.045379	1.204368	1.069254
new_educ3	-.1682014	-.021311	.7148603	.9599064
new_educ4	-.1699341	-.0087476	.8235926	.9905472
new_educ5	-.0286442	.0040139	.9016424	1.014833
tp_ar	-.0519459	-.0377546	.9770984	.9804435
age_gr	-.5067617	-.2365787	1.14615	1.070459
new_wealth1	-.1781535	-.0072135	.5458329	.9773427
new_wealth3	.1260486	.0137412	1.051212	1.005713
new_wealth6	-.1241023	.006099	.4344245	1.037437

5. Were you requested to pay informally?

	Raw	Matched
Number of obs =	1,040	2,080
Treated obs =	362	1,040
Control obs =	678	1,040

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.2069418	.0641197	1.117335	1.038271
new_urgent_un~n	.0478303	-.0161223	1.449641	.876709
new_educ1	.0100184	0	1.070039	1
new_educ2	.123517	.045379	1.204368	1.069254
new_educ3	-.1682014	-.021311	.7148603	.9599064
new_educ4	-.1699341	-.0087476	.8235926	.9905472
new_educ5	-.0286442	.0040139	.9016424	1.014833
tp_ar	-.0519459	-.0377546	.9770984	.9804435
age_gr	-.5067617	-.2365787	1.14615	1.070459
new_wealth1	-.1781535	-.0072135	.5458329	.9773427
new_wealth3	.1260486	.0137412	1.051212	1.005713
new_wealth6	-.1241023	.006099	.4344245	1.037437

6. Were you requested to pay into charitable funds?

	Raw	Matched
Number of obs =	1,040	2,080
Treated obs =	362	1,040
Control obs =	678	1,040

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.2069418	.0641197	1.117335	1.038271
new_urgent_un~n	.0478303	-.0161223	1.449641	.876709
new_educ1	.0100184	0	1.070039	1
new_educ2	.123517	.045379	1.204368	1.069254
new_educ3	-.1682014	-.021311	.7148603	.9599064
new_educ4	-.1699341	-.0087476	.8235926	.9905472
new_educ5	-.0286442	.0040139	.9016424	1.014833
tp_ar	-.0519459	-.0377546	.9770984	.9804435
age_gr	-.5067617	-.2365787	1.14615	1.070459
new_wealth1	-.1781535	-.0072135	.5458329	.9773427
new_wealth3	.1260486	.0137412	1.051212	1.005713
new_wealth6	-.1241023	.006099	.4344245	1.037437

7. How much did you pay for medicines?

	Raw	Matched
Number of obs =	594	1,188
Treated obs =	158	594
Control obs =	436	594

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1939626	.0140593	1.108638	1.00855
new_urgent_un~n	.061286	-.0150654	1.649775	.8764932
new_educ1	.0533527	.0109001	1.373001	1.069581
new_educ2	.1425482	.0908791	1.238286	1.138304
new_educ3	-.1783784	-.0398509	.6633537	.9165396
new_educ4	-.1548661	-.053102	.8479168	.9462059
new_educ5	.0067235	-.0373077	1.037635	.8239034
tp_ar	-.0338773	-.0455377	.9875877	.9739789
age_gr	-.5916341	-.333657	1.127371	1.092622
new_wealth1	-.1195268	-.0236041	.7026511	.9341542
new_wealth3	.1422897	.0549807	1.063234	1.022971
new_wealth6	-.1518631	-.1358983	.2567657	.253866

8. Was it difficult to cover the costs for medicines?

	Raw	Matched
Number of obs =	945	1,890
Treated obs =	322	945
Control obs =	623	945

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.2249793	.0874884	1.116568	1.046454
new_urgent_un~n	.0373132	-.0096465	1.37806	.9176492
new_educ1	.0174632	0	1.127467	1
new_educ2	.1594623	.0514304	1.250836	1.073716
new_educ3	-.208914	-.0298637	.6459457	.942173
new_educ4	-.1502483	-.0048142	.8434699	.9947818
new_educ5	-.0853063	0	.7097719	1
tp_ar	-.0358992	-.0196395	.9845575	.990096
age_gr	-.5071529	-.2430266	1.137002	1.069293
new_wealth1	-.1870772	-.0115641	.5433435	.965358
new_wealth3	.1269021	.0043217	1.051114	1.001806
new_wealth6	-.0906853	.0069374	.545656	1.044322

9. Was it difficult to cover the costs for diagnostics?

	Raw	Matched
Number of obs =	957	1,914
Treated obs =	321	957
Control obs =	636	957

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.235473	.0887047	1.123673	1.048404
new_urgent_un~n	.0254164	-.0091986	1.236469	.9240548
new_educ1	.0413287	0	1.314753	1
new_educ2	.1418893	.0513906	1.230213	1.076443
new_educ3	-.2088185	-.0290491	.652452	.9453601
new_educ4	-.1391054	-.0047671	.8531099	.99477
new_educ5	-.0773753	0	.7397546	1
tp_ar	-.0491924	-.0258451	.9786645	.9871005
age_gr	-.5221633	-.2594089	1.145639	1.075047
new_wealth1	-.1744199	-.0193722	.5628636	.9412211
new_wealth3	.1168917	.0042788	1.049989	1.001899
new_wealth6	-.0959514	.0067481	.5299003	1.042361

10. How much money did you need to borrow to cover all expenses?

	Raw	Matched
Number of obs =	670	1,340
Treated obs =	205	670
Control obs =	465	670

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1775017	.0529715	1.102405	1.032421
new_urgent_un~n	.0562032	-.0152164	1.695503	.8584357
new_educ1	.0881215	.0280563	1.628151	1.182053
new_educ2	.2223523	.0548314	1.365862	1.080823
new_educ3	-.1660644	-.0294846	.7082258	.9428507
new_educ4	-.1319274	.0168387	.8624305	1.01782
new_educ5	-.0004645	-.0559694	1.000895	.787592
tp_ar	-.001178	-.0645154	1.002235	.9689291
age_gr	-.6151623	-.2984854	1.21974	1.130313
new_wealth1	-.1455012	-.0364319	.653398	.9009127
new_wealth3	-.0100314	-.0062888	.9961374	.9958103
new_wealth6	-.1930983	-.0939954	.1666911	.4723664

11. How do you rate sanitary conditions?

	Raw	Matched
Number of obs =	1,034	2,068
Treated obs =	360	1,034
Control obs =	674	1,034

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1994555	.066523	1.114243	1.039839
new_urgent_un~n	.0609764	-.0082208	1.627746	.9342493
new_educ1	.0099919	0	1.069643	1
new_educ2	.1276542	.0432604	1.211426	1.066008
new_educ3	-.1650686	-.0214389	.719639	.9596543
new_educ4	-.1811116	-.0088135	.8110354	.9904049
new_educ5	-.0288282	.0040263	.9013714	1.014827
tp_ar	-.0552011	-.0359604	.9756273	.9814762
age_gr	-.5227341	-.2422011	1.152623	1.075808
new_wealth1	-.1788104	-.0108854	.5458156	.9659943
new_wealth3	.1268757	.0138243	1.051867	1.005783
new_wealth6	-.1164691	.0062328	.4543012	1.038969

12. How do you rate access to diagnostic tests?

	Raw	Matched
Number of obs =	1,000	2,000
Treated obs =	345	1,000
Control obs =	655	1,000

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.166569	.0415554	1.094692	1.023788
new_urgent_un~n	.0923841	-.0089963	2.193109	.9240122
new_educ1	-.0181501	0	.8796584	1
new_educ2	.1261977	.0472694	1.210475	1.072584
new_educ3	-.1547634	-.0247605	.7397085	.9542268
new_educ4	-.1849715	-.0090922	.8086897	.9902009
new_educ5	-.019409	.0042252	.9319715	1.015868
tp_ar	-.0472873	-.045713	.9792972	.9744683
age_gr	-.5264821	-.2509181	1.160354	1.083815
new_wealth1	-.1811881	-.0037381	.5396374	.9882502
new_wealth3	.1175358	.0142789	1.047636	1.005819
new_wealth6	-.1081875	.0064653	.4831553	1.040599

13. How do you rate doctor qualification?

	Raw	Matched
Number of obs =	1,013	2,026
Treated obs =	355	1,013
Control obs =	658	1,013

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1994382	.0410637	1.11397	1.023827
new_urgent_un~n	.0742305	-.0086046	1.838899	.9295009
new_educ1	-.0109859	0	.9294436	1
new_educ2	.1372791	.0467166	1.231095	1.071945
new_educ3	-.1711508	-.024445	.714857	.9547889
new_educ4	-.1692094	-.0067473	.8228919	.9926445
new_educ5	-.0314957	.0041637	.8908497	1.0156
tp_ar	-.0517699	-.0367479	.9781789	.9807373
age_gr	-.5095891	-.2471517	1.156104	1.075311
new_wealth1	-.1784145	-.0073592	.548903	.97709
new_wealth3	.131109	.0181476	1.053914	1.007648
new_wealth6	-.1106709	.0064227	.4717881	1.040613

14. How do you rate friendliness of doctors?

	Raw	Matched
Number of obs =	1,030	2,060
Treated obs =	358	1,030
Control obs =	672	1,030

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1907563	.0444306	1.110097	1.025838
new_urgent_un~n	.0614277	-.008237	1.631878	.9342529
new_educ1	.0103992	0	1.07237	1
new_educ2	.1265491	.0458987	1.210915	1.07043
new_educ3	-.1644037	-.021488	.7214384	.9596946
new_educ4	-.1869865	-.0088473	.805073	.9903704
new_educ5	-.0282266	.0040346	.9036025	1.014822
tp_ar	-.0533272	-.0483345	.9768684	.9736538
age_gr	-.5119361	-.2391655	1.149123	1.075117
new_wealth1	-.1785193	-.0109083	.5472552	.9660071
new_wealth3	.1387562	.0138861	1.057052	1.00589
new_wealth6	-.1244225	.0061293	.435461	1.037427

15. How do you rate friendliness of nurses?

	Raw	Matched
Number of obs =	1,025	2,050
Treated obs =	358	1,025
Control obs =	667	1,025

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1919748	.0590642	1.111095	1.036039
new_urgent_un~n	.0606256	-.0082573	1.619864	.9342574
new_educ1	-.0310536	-.0296992	.8029741	.8031841
new_educ2	.1336901	.046039	1.222428	1.070279
new_educ3	-.163985	-.0188802	.7219387	.9645509
new_educ4	-.1816153	0	.8117993	1
new_educ5	-.0302036	.0040451	.8973405	1.014817
tp_ar	-.0445076	-.0241277	.9809829	.9879814
age_gr	-.5134359	-.2482577	1.150429	1.075812
new_wealth1	-.1759504	-.0073124	.5511921	.9770635
new_wealth3	.1423317	.0059852	1.059076	1.002585
new_wealth6	-.1257319	.0061446	.4323258	1.037422

16. How do you rate treatment efficiency?

	Raw	Matched
Number of obs =	1,000	2,000
Treated obs =	350	1,000
Control obs =	650	1,000

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1947506	.0748801	1.109859	1.043651
new_urgent_un~n	.0315843	-.0401895	1.323563	.6693657
new_educ1	-.0107762	-.0292872	.9312614	.8128314
new_educ2	.1502201	.0470967	1.250721	1.071534

17. How do you rate your overall satisfaction with inpatient care?

	Raw	Matched
Number of obs =	1,009	2,018
Treated obs =	355	1,009
Control obs =	654	1,009

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
new_urgent_kn~n	.1951787	.064037	1.110439	1.038326
new_urgent_un~n	.0883462	-.0089556	2.12917	.9240037
new_educ1	.0184263	0	1.132081	1
new_educ2	.1452172	.044407	1.2444	1.068153
new_educ3	-.1787099	-.0246295	.7017012	.9541193
new_educ4	-.1767555	-.0045356	.8117804	.9949574
new_educ5	-.0392757	.0041406	.8666115	1.015321
tp_ar	-.0411986	-.0389023	.9823965	.9799513
age_gr	-.5329792	-.2562926	1.148956	1.077439
new_wealth1	-.1650892	0	.5698718	1
new_wealth3	.132082	.0141552	1.052804	1.005805
new_wealth6	-.1201012	.0063115	.4473777	1.038943

SUMMARY

This dissertation contributes to our knowledge on maternal care in Eastern Europe. Maternal health outcomes in this part of Europe are poorer than those in Western Europe. An important factor for good maternal health outcomes is access to adequate maternal care for all women, which is the focus of this dissertation. The motivation for this topic is the importance to obtain knowledge and insight into the different aspects of access to adequate maternal care in Eastern Europe, and the need for more evidence to support policies that intend to achieve better maternal health outcomes. Specifically, the dissertation aims to increase our understanding of access to adequate maternal care in Eastern Europe in terms of availability, affordability, appropriateness, approachability and acceptability of maternal care.

To achieve this aim, this dissertation has reviewed the evidence in the published literature on this topic for Central and Eastern Europe. The dissertation has also provided evidence and comparison on the five aspects of access to maternal care based on the insights of mothers, decision makers and maternal care providers in several Eastern European countries where the MMR is relatively high, namely Bulgaria, Georgia, Latvia, Moldova and Romania. Furthermore, a study focusing on Ukraine has presented evidence on the affordability and appropriateness of inpatient maternal care in Ukraine by comparing inpatient maternal care users to inpatient non-maternal care users. The broad range of evidence provided in this dissertation, can facilitate evidence-informed decision-making in the area of maternal care in Eastern Europe. In view of this, the dissertation outlines and discusses key findings from the perspective of policy and research. It ends with concluding remarks on how to improve access to adequate maternal care in Eastern Europe. This dissertation has 7 Chapters summarised below.

Chapter 1 outlines the scope of this dissertation as well as the key concepts. The Chapter also provides background information on maternal care in Eastern Europe with country examples, the study context, the conceptual model, the relevance of the research reported in the dissertation and the overall research approach as well as the central aim and research questions of the dissertation. As stated in the Chapter, the purpose of the dissertation is to increase our knowledge and understanding of the factors that contribute to barriers in accessing adequate maternal care in Eastern Europe. To do so, this dissertation assesses and identifies barriers to accessing adequate maternal care in Eastern Europe, which relate to the care for woman and her child during pregnancy, childbirth and the postnatal period.

In view of the research aim, the central research question of the dissertation is: **What are the barriers to accessing adequate maternal care in Eastern Europe?** Since access to care is a complex concept, this dissertation formulates five sub-questions to evaluate

five aspects of access based on the framework presented in Levesque et al., 2013. Figure 1.1. illustrates the operational definition of access to adequate maternal care applied in this dissertation. The sub-questions enquire into barriers related to (1) availability, (2) affordability, (3) appropriateness, (4) approachability and (5) acceptability of maternal care in Eastern Europe.

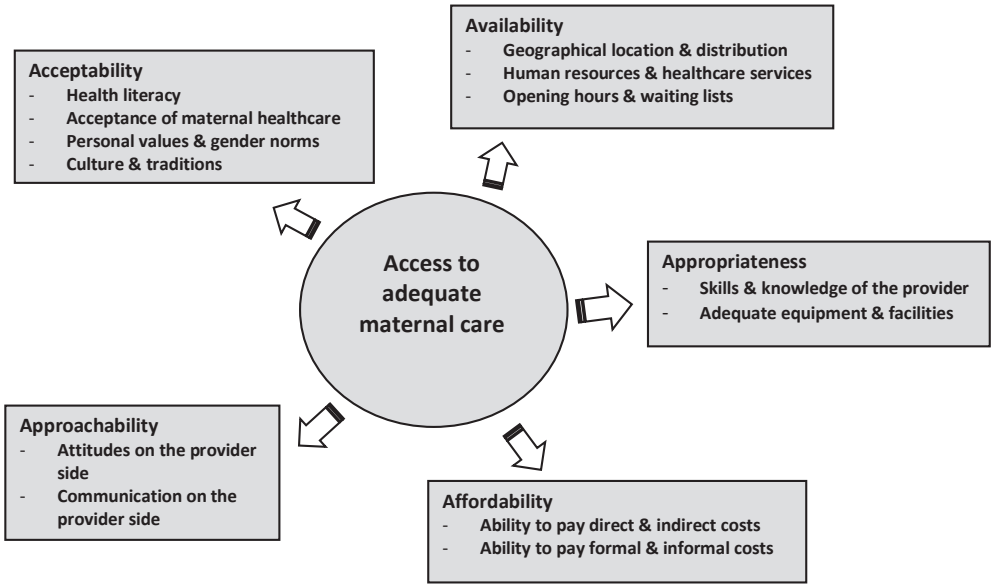

Figure 1.1: Conceptual framework on access to adequate maternal care; based on Levesque et al. [15]

To answer the central research question and the sub-questions, the dissertation employs various quantitative and qualitative data collection and analysis methods. It includes a systematic literature review, qualitative data collection and analysis of in-depth interviews with healthcare providers and decision makers as well as focus-group discussions and online surveys with mothers. Quantitative methods are used to analyse online surveys with mothers as well as for the analysis of household surveys using matching technique. The Chapter concludes with an outline of the dissertation.

Chapter 2 presents the results of a systematic literature review on the barriers to accessing adequate maternal care in Eastern European countries in terms of all five aspects of access - availability, affordability, appropriateness, approachability and acceptability. It systematically reviews the empirical evidence on this topic from 2004 to 2016. The search was limited to articles in English language. The literature search used five databases, starting with PubMed and being expanded to EBSCO HOST (CINAHL plus), Global Health, Popline, and EMBASE. The main keywords that were used for the article search were: maternal care, access and Central and Eastern Europe. These keywords were chosen as they were in line with the main concepts of the research objective. These

keywords were used in different variations and combinations. In total 21 articles were included for analysis. The included articles were analysed using a framework analysis technique and quality was assessed using standardised evaluation checklists.

The results of this Chapter show improvements in maternal care in Central and Eastern Europe. However, the evidence indicates a variety of access-related problems. These include problems with reaching the healthcare facility due to distance, poor and derogative attitudes of providers of maternal care and waiting times. Furthermore, there is a lack of evidence-based care and in some instances, outdated equipment and lack of pharmaceuticals. In some CEE countries, access is limited because mothers are unaware of the importance of care and cultural aspects that discourage the utilisation of health services. Specifically, some population groups, such as Roma women in the Balkans, are not well accepted by healthcare providers and face discrimination that limits their access to care. However, a major barrier in accessing maternal care in the CEE region is the inability to pay for it. This widely prevalent financial barrier can be seen in formal as well as informal OOP payments.

This Chapter concludes that major gaps in evidence exist and that more representative and better-quality data should be collected. Governments in CEE countries need to establish a reliable system for measuring and monitoring a suitable set of indicators, as well as deal with the general social and economic problem of informality. To overcome the identified barriers, medical curricula in the CEE region need to be overhauled and there should be a focus on improving the allocation of medical staff and institutions as well as protecting vulnerable population groups to ensure universal access to care.

Chapter 3 of this dissertation is based on a single country qualitative study that presents the views of mothers, decision makers and healthcare providers on access to adequate maternal care in Georgia by evaluating the five aspects of access to maternal care - availability, affordability, appropriateness, approachability and acceptability. This is done by exploring the lived experiences of women and opinions of decision makers and maternal care providers on access to adequate maternal care in Georgia. Women shared their experiences during focus-group discussions in Georgian language, whereas decision makers and maternal care providers unfolded their views through semi-structured interviews in both, English and Georgian language. In total, 44 women participated in six focus-group discussions (two focus-groups in each of the three study-settings). Each group consisted of women who had experienced their last childbirth within the preceding four years. Furthermore, five decision-makers and four healthcare professionals were interviewed. The decision-makers and healthcare professionals were selected through purposive and convenience sampling, based on their position and importance in the field of maternal care in Georgia. Data were analysed by means of directed content analysis.

The results indicate problems with maternal care standards, inequalities across population groups and drawbacks in maternal care financing. More specifically, the problems in maternal care provision involve the lack of equipment, human resources and evidence-based treatment. Geographical distance is also problematic for rural and high-mountain population groups due to care being concentrated in the capital city, weak transport infrastructure and high traveling costs. Despite improvements in the coverage of maternal care, affordability remains an access barrier. Poorer population groups are financially unprotected from the high OOP payments for maternal care services. In addition, Georgian women have to carefully select an available provider of care to avoid problems such as inadequate attitudes, poor clinical quality or appalling conditions at the maternal care institution. This can be challenging even for well-off and better informed and educated women, but even more so for women with fewer resources and provider options. Gaps in the knowledge and skills of health professionals, the low health literacy of women and the resulting communication problems may prevent women from receiving high-quality care, which may contribute to poor health outcomes.

This Chapter concludes that the shortcoming in maternal care provision in Georgia related to maternal care standards, inequalities across population groups and maternal care financing may help to explain the high maternal mortality in the country and these shortcomings need to be addressed in future reforms. Micro-level indicators, such as disrespectful behaviour of health professionals, women's trust in maternal care providers, care acceptability and affordability should be taken into account when assessing maternal care provision in Georgia. It should complement the existing macro-level indicators for a comprehensive evaluation of maternal care.

Chapter 4 explores the barriers to access to adequate maternal care in Latvia. This was a mixed-method study based on an online survey containing open-ended and closed questions among women who gave birth in the preceding four years, as well as in-depth interviews with healthcare providers and decision-makers. The stakeholders identified barriers to accessing adequate maternal care in Latvia with respect to all five aspects - availability, affordability, appropriateness, approachability and acceptability. In total, responses from 50 women, 7 healthcare professionals and 6 decision-makers were included in the analysis. Women participants were recruited through 48 Facebook "mommy" discussion groups that covered all five geographic regions of Latvia. The survey questions were structured around the five key aspects of access to adequate maternal care and women participants were asked to share their experience and views from their last pregnancy and childbirth. Questions on socio-demographic characteristics were also included. Interview participants were selected through purposive and convenience sampling, based on their position and relevance in the field of maternal care in Latvia. In addition to questions related to the five aspects of access to adequate care, questions on maternal death registration and maternal care guidelines were added to help further

explore the adequacy of maternal care. Data were collected and analysed using the method of directed qualitative content analysis in Latvian language and then translated into English language by a bilingual researcher.

Results indicate that women in Latvia find it important to receive adequate maternal care which includes appropriate provider attitudes and clinical quality. Assuring such care can be challenging even for well-off and better-informed women, but even more so for less informed women and women who cannot afford care in the private sector and whose choice is limited to publicly funded services. Additionally, results also show insufficient use of medical guidelines. Availability of care related to geographical distance can also be problematic to some extent in rural population groups and high-risk pregnancies, due to the urbanisation of care and the related time and traveling costs involved. In terms of human resources, the stakeholders mentioned an increasing shortage of maternal care providers, especially in rural areas and public inpatient care facilities. The stakeholders confirmed that affordability of maternal care is generally not a problem in Latvia. Affordability might become problematic when a woman during her maternal period requires care outside the maternal care sector. Nevertheless, there are clear inequities in being able to afford (maternal) care in the privately financed sector. Stakeholders also noted social problems and poor health literacy combined with lifestyle-related problems as factors affecting the maternal care-seeking behaviour.

This Chapter concludes that there are access barriers related to availability (i.e. shortage of human resources, geographical distance) and appropriateness (i.e. inequalities in provider knowledge, care provision and use of clinical guidelines). Other challenges are related to providers' approaches towards women (i.e. communication) and, to a lesser extent, maternal care acceptance by women (i.e. health literacy). Addressing these factors in future reforms could help to improve access to adequate maternal care. Although this study focuses on Latvia, it is relevant for data collection in other countries. The study results are also relevant for countries with similar contextual factors, such as many countries in Eastern Europe where maternal care problems might remain concealed by comparatively good macro-level indicators. In addition to already existing macro-level indicators, these micro-level indicators should be taken into account for a comprehensive evaluation of the provision of maternal care in Latvia and elsewhere.

Chapter 5 reports on a cross-country quantitative study where women in Romania, Bulgaria and Moldova participated in an online survey and presented their experience with maternal care received in the three countries in terms of availability, affordability, appropriateness, approachability and acceptability of care. The study explores the association between access-related indicators and various demographic characteristics and health status. Survey data were collected through social media platform Facebook

"mommy" groups in the respective country languages. The online questionnaire consisted of closed questions which covered the general demographic characteristics of the respondents, information on their maternal health condition and their experience with maternal care during the last childbirth related to the five groups of access indicators. The questionnaire was developed in English and validated in the previous study in Latvia. Regression analysis in SPSS© was performed to identify factors associated with access to maternal care across the three countries.

Results are based on 7345 responses of women in Romania (n=2018), Bulgaria (n=4951) and Moldova (n=376) who gave their last childbirth in 2014-2017. The results identify several shortcomings in the use of maternal care in these countries, including high rates of C-section births, low numbers of antenatal and postnatal care visits, existence of informal payments and use of personal connections to obtain desired care. Health complications during the maternal period and fewer antenatal care visits are significantly associated with barriers in the availability of adequate care in all three countries. Similarly, with regards to appropriateness, having health complications during the maternal period and fewer antenatal care visits, but also giving birth in a public facility, are significantly associated with lower user satisfaction with provider skills and maternal care facilities. Indicators related to the affordability of maternal care show that in all three countries having health complications during the maternal period are significantly associated with paying OOP, experiencing a financial burden, paying informally and using personal connections, while giving birth in a private facility is significantly associated to paying less informally and using fewer personal connections. Furthermore, giving C-section birth is significantly associated with facing a financial burden, all forms of OOP payments and using personal connections in Romania and Bulgaria. With respect to approachability, in all three countries women who had fewer health complications and a higher number of antenatal visits were more satisfied with the way providers approached them, while giving birth in a private facility increased the satisfaction during the postnatal period (i.e. attitude, communication and provision of information).

This Chapter concludes that the identified barriers relate to four of the five dimensions of access we examined: availability, appropriateness, approachability and affordability of care. These findings help to inform relevant maternal care stakeholders and stress the need for a range of measures to improve access to adequate maternal care in the three countries. This involves reducing the financial burden on women during the maternal period, especially for those having complications and giving C-section birth. Furthermore, there is a need for measures to address informalities in receiving maternal care, improve adequacy of postnatal care provision, increase the number antenatal and postnatal visits women receive, as well as to reduce the exceptionally high rates of C-section births in Romania and Bulgaria.

Chapter 6 presents a quantitative study based on secondary data analysis using three waves of a national household survey in Ukraine, the "Health Index Ukraine" conducted in 2016-2018. It outlines the affordability and appropriateness of inpatient maternal care in Ukraine as experienced by maternal inpatient care users (cases) when compared to the experiences of non-maternal inpatient care users (controls). In total, 30,556 respondents were interviewed over three years. Our study sample (adult women in reproductive age, 18-44 years, who were hospitalised in the prior 12 months), consisted of 1041 respondents; 369 in 2016, 359 in 2017 and 313 in 2018. These numbers include both users of maternal (cases) and non-maternal (controls) inpatient women. Matching methods were used to make the two groups comparable and the average treatment effect on the treated was calculated in STATA© to determine the differences in the affordability and appropriateness of inpatient care between the cases and controls. Five characteristics were used in the matching analysis: age group, type of settlement, education level, household financial status and hospitalisation urgency. We applied the nearest neighbour matching method, which minimises the distance between neighbours using Mahalanobis distance measurement. The average treatment effect on the treated was calculated between cases and controls after matching. To increase the statistical power, we also performed the ATT analysis on the pooled data, i.e. all three years combined. In the pooled data analysis, the matching of the cases and controls described above was extended to include an exact matching for the survey year. In all analyses, our study applied a statistical significance level of $p<0.05$.

Results show that maternal inpatient care users are more often requested and more likely to pay informally, and pay a higher amount than non-maternal care users. However, they face fewer difficulties to cover the costs of diagnostic tests and medicines. Inpatient care satisfaction is low in both groups, but maternal care users are more satisfied overall, specifically regarding treatment efficiency, sanitary conditions at facilities, access to diagnostic tests and qualifications of medical doctors.

This Chapter concludes that the study findings provide important new empirical information to inform maternal care stakeholders in Ukraine in the context of ongoing health reforms. They highlight the need for a range of measures to improve quality and affordability of inpatient maternal care. This involves addressing informalities in receiving maternal care, reducing the financial burden on women during the maternal period as well as improving quality of care through the introduction of quality indicators and the monitoring of care provision.

Chapter 7 presents a general discussion of the key findings of this dissertation. The key findings are presented in the form of five statements:

Statement 1: The urbanisation of maternal care provision results in disparities in access to adequate maternal care within and between Eastern-European countries.

This dissertation confirms that geographical access to necessary maternal care services can be challenging in Eastern European countries because most of the facilities are concentrated in urban areas and because maternal care provision is fragmented. Policy solutions to increase mothers' physical and financial access to necessary care in rural areas and to ensure a more unified quality of maternal care provision are required in order to overcome the challenges resulting from the growing phenomenon of urbanisation.

Statement 2: Informalities are a response to the presence of barriers to access to adequate maternal care.

This dissertation also shows that informalities are involved in maternal care provision in Eastern Europe and include the use of informal cash payments, gratitude gifts and personal connections. The informalities are a societal problem that have a negative effect on efficiency and equity in maternal care. In addition to economic and social–cultural measures, elimination of informal payments in maternal care requires governance measures, such as zero tolerance policies and punishment, as well as incentives (e.g. improved working conditions and salaries, ensured quality standards of services).

Statement 3: Out-of-pocket payments are burdensome in some Eastern European countries and limit access to adequate maternal care.

Due to high OOP payments, maternal services become unaffordable for many women in Eastern Europe causing care interruption or delay. Governing bodies should regulate prices and ensure the quality of services in both, private and public, maternal care sectors. Additionally, policies that protect vulnerable population groups by exempting them from (co-)payments should be put in place to reduce the financial burden of accessing adequate maternal care.

Statement 4: Securing maternal care by a provider with adequate attitude, knowledge and skills can be challenging in Eastern European countries.

Quality and continuity of maternal care services is compromised in Eastern Europe. To secure care with adequate provider attention, knowledge and skills, women in Eastern Europe are ready to pay OOP payments and use personal connections. Since women attach a high value to the reputation and attitude of the maternal care provider, it indicates that priority should be given to investments in human resources. Furthermore, there is also a need for better compliance with standards and protocols, and for making guidelines mandatory.

Statement 5: The low rates of antenatal and postnatal care visits and high rates of C-section births raise questions about the adequacy of maternal care provision in Eastern European countries.

All five access-related barriers explored in this dissertation affect the observed low rates of antenatal and postnatal care visits and high rates of C-section births. There is a need for all providers and maternal care facilities to be reimbursed equally for vaginal and C-section birth. Women should be properly informed on the benefits and risks of a C-section and the benefits of the use of antenatal and postnatal care. Women should also be informed on the care services they are entitled to and the use of these services should be further promoted through (financial) incentives, such as sufficient coverage of care and the related indirect costs upon a timely initiation of the care.

To conclude, this dissertation has shown that, to achieve better maternal health outcomes in Eastern European countries, action is required to ensure access to adequate maternal care for all women. Given the complexity of this problem, intervening on the policy level alone is not sufficient. Even though many Eastern European countries experience a shortage of resources, this dissertation also provides evidence that a more efficient allocation of existing resources would help in overcoming the access barriers women face. Furthermore, although practices cannot be directly transferred from one country to another, building on good practices abroad could be an essential starting point for reducing the barriers to accessing maternal care in Eastern Europe.

IMPACT

This dissertation contributes to our knowledge on maternal care in Eastern Europe. An important factor for good maternal health outcomes is ensuring access to adequate maternal care for all women, which is the focus of this dissertation.[142] Maternal care is the care women receive by maternal care providers (e.g. midwives, gynaecologists) during the antenatal, birth and postnatal period.[2] Adequate care means the extent to which care is safe, effective, timely, efficient, equitable and people-centred.[12] The motivation for this topic is the importance to obtain knowledge on and insight into the different aspects of access to adequate maternal care in Eastern Europe and to address the need for more evidence to support policies that intend to achieve better maternal health outcomes.

Maternal health is also an indicator of socio-economic circumstances and the functioning of a country's health system. Although Eastern European health system indicators (e.g. the number of health workers or coverage of the population with publicly funded maternal care) suggest quite well-resourced maternal care systems, maternal and neonatal health outcomes compare poorly with those in Western Europe.[10] The system-level indicators only partly indicate access to maternal care. They do not capture process-related indicators that contribute to accessing care: the distribution of facilities and services, their affordability, the appropriateness of care and its acceptance.[4,11] If care is available and there is an adequate supply of services, then the opportunity to obtain healthcare exists. However, the extent to which a population gains access and utilises the services also depends on financial, organisational, social and cultural aspects that have to be considered in context.[13,14] The available services must also be relevant, safe and effective if the population is to gain access to satisfactory health outcomes. The evidence on these matters in Eastern Europe is scattered to non-existent. Therefore, the dissertation aims to increase our understanding of access to adequate maternal care in Eastern Europe in terms of the availability, affordability, appropriateness, approachability and acceptability of maternal care.

With regards to scientific impact, this dissertation helps to start filling the identified knowledge gap by identifying barriers to access to adequate maternal care services in the Eastern European region. To do so it includes a systematic overview on access to adequate maternal care in Eastern Europe. Furthermore, as successful public health interventions require taking account of the views of relevant stakeholders, this dissertation generates new empirical evidence and understanding of the existing barriers to accessing adequate maternal care services by exploring views from multiple stakeholders (mothers, maternal care providers, decision makers) in several countries. This approach also provides a more comprehensive picture on this subject matter. To do so, it then focusses on selected Eastern European countries where evidence on this

topic is absent and MMR exceeds the average of the WHO European region. These countries are: Bulgaria, Georgia, Latvia, Moldova, Romania and Ukraine. The findings of these studies are also relevant for other countries in the Eastern European region, due to the historical similarities in political and health systems.

This dissertation has societal impact, as it is directed to the protection of mothers and their households from barriers accessing maternal care and the related poor health outcomes. More specifically, it has impact on policy implications and maternal care provision. The identified barriers provide policy makers and other relevant stakeholders with tools to further improve maternal health outcomes by addressing the barriers that limit access to and provision of adequate maternal care. The appropriate policy measures will not only enhance access to and adequacy of maternal care services, but they will also increase care satisfaction among women and will improve care-seeking behaviour in return.

As explored by this dissertation, the concentration of maternal care facilities and care provision in urban areas has a negative effect on access to adequate maternal care services in Eastern Europe. Policy solutions to increase mothers' physical and financial access to necessary care in rural areas and to ensure a more unified quality of maternal care provision are required in order to overcome the challenges of care being concentrated in urban areas. Such policy solutions should be country-specific, given the cross-country differences, but overall they could include financial protection of direct and indirect costs for maternal care among low income women in rural areas and an increased availability of adequate maternal care provision in rural areas.

Informal practices involved in maternal care provision in Eastern Europe have a negative effect on efficiency and equity in maternal care. Informalities are a societal problem, they become widespread and deeply rooted in the absence of adequate policy interventions. In addition to economic and socio–cultural measures, elimination of informal payments in maternal care requires governance measures, such as zero tolerance policies and punishment.[154] Moreover, suitable regulations coupled with incentives (e.g. improved working conditions and salaries, ensured quality standards of services) may help to decrease the need for informalities in maternal care provision.[153]

Quality and continuity of maternal care services are also compromised in Eastern Europe. There is a need for better compliance with standards and protocols, improvements in medical education and for making maternal care guidelines mandatory. Governing bodies should also regulate prices and ensure quality of services in both, private and public, maternal care sectors. Additionally, policies that protect vulnerable population groups by exempting them from (co-) payments should be put in place to reduce the financial burden of accessing adequate maternal care. Lastly, all five access-related

barriers explored in this dissertation affect the low rates of antenatal and postnatal care visits and the high rates of C-sections. In order to address this complex problem, amendments in reimbursement policies for C-section and vaginal births in public and private hospitals have been found to be an effective policy tool.[183,184] Furthermore, women should be informed properly on the benefits and risks of a C-section.[183] With regards to the use of antenatal and postnatal care services, there is a need for more information and knowledge on the benefits of these services among women, as well as on the availability of the care services that women are entitled to. The use of these services should be further promoted through (financial) incentives, such as sufficient coverage of care and the related indirect costs upon timely initiation of care.

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CURRICULUM VITAE

Elina Miteniece was born on 30 January 1992 in Jelgava, Latvia. After completing secondary school in Latvia she moved to The Netherlands and obtained her bachelor's degree in European Public Health at Maastricht University in 2014. She later obtained a master's degree in Global Health at Maastricht University, The Netherlands in 2015. Upon completion, she worked as a teaching assistant for the Faculty of Health, Medicine, and Life Sciences covering various modules in European Public Health and Global Health study programs.

Elina is passionate about improving the health of women. Her passion for women's health started with initial work on maternal health topic for her bachelor and master thesis. After that, in September 2016 she continued to work on maternal health topic as a Ph.D. researcher at Maastricht University focusing on access to maternal care in Eastern Europe. She has presented her research in (international) conferences. Meanwhile Elina has experienced maternal health(care) herself when she became a mother of her first born son Oliver in January 2021.

During her Ph.D. trajectory she had not only produced research results, but has also been involved in wide range of teaching activities. Her main teaching tasks has included lecturing, module and skills trajectory coordination and thesis supervision within Bachelor European Public Health (e.g. Health Systems; Ageing in Europe). Elina has also been a lecturer and a part of course planning group in Global Health Economics course, Masters of Global Health. Furthermore, she has lectured in various courses within Masters Health Policy, Innovation and Management and has trained new university teachers within the faculty of Health, Medicine and Life Sciences. In 2018 Elina has obtained University Teaching Qualification (UTQ). Since 2018 she has also been a visiting lecturer at Riga Stradins University in Latvia in Master's program Healthcare Management, course Health System Design.

Besides her Ph.D. research and teaching activities, since 2019 Elina has been an elected member of FHML faculty council at Maastricht University. Furthermore, she has also worked as a project officer in research projects: "Fraud and fraud mitigation in cross-border healthcare in the EU" , "Healthy ageing in EU - Pro Health 65+" and "Study on the use of real-world data for research, clinical care, regulatory decision-making, health technology assessment, and policy making". Currently Elina is raising her new-born and continuing her teaching and research activities at International Health department.

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